CHAMBERS'S

PAPERS FOR THE PEOPLE

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THE MICROSCOPE AND ITS MARVELS.

IT has been said derisively, and said too we believe by a poet, that man's eyes and reason were given him for a different purpose than to study flies. The good-natured 'Spectator,' sharing in the same spirit, speaks of microscopical observers as constituting in the main a body of patientless doctors, who for want of a better occupation gave themselves up to this and similar studies. 'There are,' says the writer of No. 21, 'innumerable retainers to physic who, for want of other patients, amuse themselves with the stifling of cats in an air-pump, cutting up dogs alive, or impaling of insects upon the point of needles for microscopic observations.' And Pope, in the following lines, appears to consider the inspection of mites as the most unworthy of employments for a being who had the face of heaven whereon to exercise his vision:—

> 'Why has not man a microscopic eye?
> For this plain reason—man is not a fly.
> Say, what the use were finer optics given
> T' inspect a mite—not comprehend the heaven.'

It is very true that for man to be endowed with microscopic vision would be a curse instead of a blessing; but it is also true that he who desires to extend his knowledge of the Creator of the heavens may both usefully and profitably employ himself even in the inspection of a mite, and that he can draw from the minutest objects around him arguments of power and wisdom equalling those of the philosopher whose studies penetrate almost into the outer boundaries of the universe. It is certainly a remarkable fact in the history of natural science, that those studies which

had reference to the minuter portions of the creation of which we form a part have often and long been held up to general ridicule, as though there were something akin to insanity in their prosecution. The science of entomology, dealing, as it chiefly does, with small objects—with mites, atomics, and flies—shared largely in this not-overwise sort of persecution. A certain noble personage (Lady Granville) was accounted a confirmed lunatic in consequence of her devotion to this science, and an attempt to set aside her will was made upon this ground alone. The great naturalist Ray appeared as a witness to her sanity. The revelations of the microscope had no charm for those who laughed at the minute philosophers, and a general discredit long overhung the entire range of natural science relating exclusively to things unseen by the unaided eye. Yet it is deserving of remark, that all objects created by the skill of man of an unusually minute size were at this very time held in higher esteem than perhaps at any former or subsequent period of history. If we would see men packing art into a nut-shell, and rejoicing in the tiniest mechanisms which years of toil enabled them to produce, we must look into the annals of the time when the study of the minute things of nature underwent a perpetual charge of folly, and lay under obloquy and contempt. The same persons who were enchanted with an 'Æneid' in a walnut, or a watch in a ring, had no taste for what the microscope taught them of the wonders of the world of little things which floats around us. At the time that public curiosity considered minute organisms too despicable to demand its notice, men of science beheld in them a microcosm of new marvels—a world overlying, underlying, interpenetrating the great tangible world of things which men see, touch, and taste. At the same time also that the despisers of small things were perplexed at the stupendous destructions which visited their crops, their orchards and stores, men of microscopical expertness beheld the cause itself in the tiny insect, or still more minute fungus, whose rapid propagation exhibited, in the effects produced, the importance of things thought to be insignificant. It is a striking, and in truth a humbling fact, that few of the great phenomena of nature are produced by great and visible causes. The white sea-wall of the southern coast of our island is not an aggregation of the remains of vast, but of the most minute and insignificant beings. The limestone rocks, which form no small part of our planet's crust, were the result of organic agencies—were never formed by creatures so great as an elephant—nay, even so large as a bird—but of little atomics which would perish by hundreds under the foot-tread of a man. The same is true of the rocks of coral—the masonry, not of the great leviathan of the deep, but of a humble animal of the minutest size. Humble, mean, even microscopic, are those beings honoured of God in the construction of so large a portion of our solid earth. By the agency of animalcules and infusoria He has done a work of inconceivable vastness and extent. Yet the science which reveals to us these facts is that which, in common with the things of which it deals, has been the subject of so much contempt and neglect at the hands of men. The world has to learn, and in our day it is only beginning to be taught the fact, that the microscopic life which teems in the ocean, on the land, and in the air, plays a far higher and more important part in the economy of creation than has hitherto been assigned to it. And science is hourly instructing us in a lesson to which

we are singularly averse—that those things which seem to us great and notable in the operations of nature, are immeasurably surpassed in force and extent by those which, without the microscope, cannot be seen at all, at least in their individual states. Cowley tells us, 'I love littleness almost in all things—a little convenient estate, a little cheerful house, a little company, and a very little feast!' But the microscopical observer loves littleness, because, without a paradox, it is in its combined state the source and even the cause of the greatest phenomena in the visible world, and because it reveals to him the evidence of that Creative Power before whom great and small are terms without meaning. The French writer's seeming paradox is one which is full of deep meaning and truthful application. 'If,' says he, 'the Author of Nature is great in great things, He is exceeding great in small ones.'

Roger Bacon, to whom are attributed so many discoveries affecting the present position of science, and the welfare of mankind, is held by some to be the inventor of this valuable and now important instrument—the microscope. Whilst at Oxford, he is said to have constructed a glass which exhibited such curious things, as to have gained for him the unenviable reputation of dealing with supernatural agencies. By others it is attributed to Jansen, a spectacle-maker of Holland. One of the instruments made by this optician came into the possession of Cornelius Dubbel, mathematician to King James II., who immediately began to make similar ones, and called the invention his own. A microscope at this date had the following rather extraordinary dimensions:—It was 6 feet long, 1 inch in diameter, consisting of a gilt copper tube, supported on brass pillars, the base being ebony, and embellished with a couple of dolphins! It was, in fact, a transmogrified telescope. Galileo seems to have deserved, but has somehow missed, the honour of being considered the inventor of the microscope. Hooke was among the earliest and best of English microscopical observers. At the request of the Royal Society he published a curious folio volume entitled 'Micrographia, or some Physiological Descriptions of Minute Bodies made by Magnifying Glasses.' The reader will feel interested to learn one of the first-recorded 'observations' made by the microscope in his hands. He observes that as the geometrician begins with a point, so it seemed natural for him likewise—and accordingly he began *with the point of a needle*. This interesting object is engraved for the satisfaction of the curious. Hooke appears first to have perceived the vast difference which this instrument reveals to us between the works of man and those of God; and he shows in a clear and satisfactory manner that works of art, however exquisite, when examined by an organ more acute than that by help of which they were made, disclose to us the fact, that the more we see of their shape, the less beautiful they appear; whereas in the works of nature the deepest discoveries reveal the greatest excellencies. Hooke becomes very facetious over the edge of a razor as seen under his microscope, and the whole of observation the second is occupied therewith. The rest of the volume deals with some more scientific topics; and the excellent plates which embellish it, doubtless must have impressed the minds of the learned with the fact, that an instrument was now in process of being applied to science which promised to unlock many of her hidden treasures.

In Hooke's time one Divini of Rome made what may be appropriately called a huge microscope! It was nearly a foot and a-half long, was as thick as a man's thigh, and had an eye-glass as large as the palm of the hand! Subsequently Leeuwenhoek gave a new impulse to microscopical study by his magnificent discoveries. He used small double-convex lenses, which he made himself. Each of his microscopes was adapted only to one or two objects. They were made of silver, and he possessed some hundreds of them. He bequeathed a quarter of a hundred to the Royal Society. Sir Isaac Newton exercised his powerful mind upon the perfecting of this instrument, and is said to have invented a compound reflecting microscope, which he recommended to be used with a single-coloured light—such as a yellow. While attention was thus kept upon the subject, a curious little fact was dropped upon by a Mr Gray: he found that a drop of water, placed over a hole in a piece of brass, instantly assumed and maintained the spherical form, and thus constituted an excellent lens! Water-microscopes were now employed. This discovery has lived to the present time, and books on popular science not unfrequently mention the fact.

In 1738 Dr Nathaniel Lieberkuhn of Berlin invented the solar microscope. This was an apparatus which for a time excited great attention; but subsequently it was found to be inapplicable to the purposes of observers in microscopical evidence. Great wonder and astonishment were created at the exhibition in London of the magnified images of objects projected upon a screen of paper, and the microscope was thus for the first time made a means of displaying, to a large number of observers at once, the hidden wonders of the little things around them. Lieberkuhn also invented the concave silver speculum, which is still employed for the inspection of opaque objects, and is known by its illustrious discoverer's name. Simple and compound microscopes became subsequently extremely common, and they were generally supplied with a set of little objects in ivory slides, which formed the chief part of the microscopist's study and exhibition in those days. 'He who could exhibit these objects well,' says M. Quekett, 'was considered a proficient in the art.' The microscope was still in its non-achromatized state, and when used in the compound form, a prismatic halo was seen to surround every object seen through it. The simple microscope, in which this defect was imperceptible, was consequently chiefly used, though with a great loss of light, in consequence of the very small diameter of the lenses employed, and the shortness of their foci. To remedy this, precious stones were employed to form lenses. The diamond, from its peculiar properties with respect to light, appeared specially applicable for this purpose, but the labour of grinding it was immense. Mr Pritchard had the annoying misfortune of having nearly completed a minute lens out of a brilliant, when it disappeared, and could nowhere be found. A rose-diamond was then selected, and the labour commenced anew, and this time with a successful issue—the patient operator having, after prolonged toil, the satisfaction of being the first to look through a diamond microscope. Lenses of garnet and other precious stones were subsequently made, and the results were highly satisfactory; but the labour and expense incurred in their manufacture proves an insuperable barrier to the employment of such materials in the advancement of microscopical science. Fortunately the invention of the compound achromatic instrument supplies at

once a vastly superior microscope, and at a cheaper rate. Among other important matters relating to microscopic instruments, the invention of what are called doublets deserves to be specially noticed. As improved by Wollaston, this instrument, or one substantially similar, forms one of the most powerful combinations at present in use, next to the compound achromatic microscope itself.

The introduction of the principle of achromatism in the construction of microscopes forms so important a part of the history of the science, that we are justified in a simple endeavour to explain what is meant by this term, which is now coming into general use. The rays of light, when collected by a lens, and transmitted through it, are differently affected in their passage through the glass. Some are more, some less bent out of their course than others; consequently all the rays of light are not brought to one and the same focus. Those which pass through the outer edges of the lens are much more bent aside, and brought to a nearer focus, than those passing through its centre. This defect is called spherical aberration. But there is another, and not less important defect, which has received the designation chromatic aberration, and the correction of which, no less than that of the former, was an essential element in the construction of a perfect microscope. By chromatic aberration is implied that difference in the refrangibility of the different prismatic rays, or coloured rays, which causes some of them to come to one focus, and some to another. If all united in a common focus, after passing through a lens or combination of lenses, the colours would not be seen, and the light would be perfectly white. On this principle the construction of what is termed an achromatic lens depends. It is an optical arrangement of glasses, which unites into a common focus those primary rays of red, blue, and yellow, which, when combined, and mixed in certain proportions, constitute white light. The defect of spherical aberration is overcome by a combination of two lenses of different forms. But the defect of chromatic aberration is overcome by a combination of lenses of a different density, and consequently exercising different properties over light transmitted through their substance. In the construction of the achromatic lens glass of different kinds is used. One lens is of crown-glass, which has a comparatively low refractive and dispersive power over the rays of light; the other is of flint-glass, which has a higher refractive and dispersive power than crown-glass. These lenses are consequently capable of correcting each other, if we may so speak; and the result is, that a perfectly white light is perceived through them. When not only the chromatic, but the spherical aberration of the rays is to be corrected, two or three lenses are employed. The following description of the state of the compound microscope, prior to the introduction of these improvements, will give an idea of its imperfections, and of its total inapplicability to the purposes of science:—'The image formed by the object-glass,' says Mr Ross, 'was not a simple one, but made up of an infinite number of variously-coloured and variously-sized images. Those nearest the object-glass would be blue, and those nearest the eye-glass would be red—the effect of this being the production of so much confusion, that the instrument was reduced to a mere toy, although these errors were diminished to the utmost possible extent by limiting the aperture of the object-glass, and thus restricting the angle of the pencil of light from each point of the

object. But this proceeding made the picture so obscure, that, on the whole, the best compound instruments were inferior to the simple microscopes having a single lens, with which, indeed, almost all the more important observations of the preceding century were made.' The application, however, of the principles of constructing an achromatic lens was an extremely difficult undertaking, and long defied the skill of many of the most eminent in science. The extreme smallness of the lenses formed one of the chief difficulties. 'When it is considered,' says Dr Carpenter, 'that in the highest powers now made, the largest of three pairs of lenses is very little larger than a pin's head, and the smallest is much smaller than a pin's head, we can easily understand the difficulty of producing the required achromatic corrections in these cases, and admire the marvellous mechanical skill and precision of hand, as well as correct knowledge in the maker, to produce the perfect correction required. The aperture of one-sixteenth of an inch is not more than would be made by the prick of a small pin, and yet through that small hole the most perfectly distinct and beautiful images could be produced, which reveal the most extraordinary structures in bodies that were previously considered to present no mark or indication of structure whatever. A compound achromatic microscope, as now constructed by the best makers, consists, so far as the optical part of the apparatus is concerned, essentially of a reflecting mirror, of the object-glasses or magnifying powers, and of the eye-pieces. Each eye-piece consists of two plano-convex lenses, placed at a distance from each other equal to half the sum of their focal lengths. The lens next the eye of the observer is called the eye-glass, whilst that the most distant is called the field-glass. The field-glass contracts the size of the picture, by bringing together the rays of light, and so enables a larger part of it to be seen at once than would otherwise have been the case. The best achromatic object-glasses consist of two or three compound lenses, which are fixed in a separate tube. An idea of the amount of labour, skill, and care requisite in the construction of this small but vital part of the apparatus may be formed from the fact, that the highest-power object-glass is sold at about £12; and six or seven object-glasses of lower powers, and consequently somewhat lower cost, are the adjuncts of every first-rate instrument. From £60 to £70 sterling is the value of a first-rate compound achromatic microscope, supplied with its necessary accessory apparatus.'

It is time our attention were now directed to the application of this beautiful and perfect instrument to the revelations of the minute and invisible worlds of life which surround us, and which populate alike the thin air, the waters, and the dry land. In attempting to furnish a sketch of what the microscope has disclosed us concerning the minute world of organic life, which we have spoken of as interpenetrating, overlying, and surrounding the larger worlds of visible and tangible organization, and also its revelations of the minute structure of bodies, it is necessary to adopt a somewhat desultory arrangement of facts. Our endeavour will be to furnish an outline of the most remarkable of these discoveries, accompanied with such instances of the application of the microscope to the purposes of science and of every-day life as appear the most interesting. Let us take a glance at what this wonder-working

apparatus reveals to us of the structure of the solid crust of our globe. In 1839 Professor Ehrenberg communicated to the Natural History Society of Berlin the remarkable fact of his having discovered a bed of earth which the microscope revealed was composed almost wholly of living infusoria. This formation is situated in Berlin itself, and extends to twenty, and in some localities, it is said, even to sixty feet in depth, in the form of a funnel. It is situated at a depth of about fifteen feet. It is composed in about two-thirds of its mass of minute siliceous infusoria, of which the most astonishing fact concerning is, that a very considerable portion is still living and breeding. The organisms cannot come in contact with the air for the purpose of oxygenation in any other way than by the water which percolates through the mass; yet life is sustained, and apparently actively carried on, in this enormous population of microscopic beings. Twenty feet below the pavement of this city lies the city of the infusoria; and the bustle of human life thick and crowded above bears no comparison to the intensity of that below, where in a few cubic feet are contained billions more than the population of the city of men. In some quarters of Berlin the solidity of buildings is actually endangered by this bed of living beings. About the same period, a mass more than twenty feet in thickness of light siliceous earth was found near Ebsdorf, in the neighbourhood of Lüneburg in Hanover. This bed is covered with one of peat earth only one foot and a-half thick. The upper stratum is about ten feet thick, and is very white; the under one is coloured, and is about the same thickness. On examination by the microscope, it was found that these beds not only contained the minute shields of invisible infusoria, but actually consisted of them. These coverings were in a beautiful state of preservation, and were recognised as identical with those of infusoria living in the ponds in the neighbourhood. Individually, it need scarcely be said that they were wholly invisible to the naked eye. On the discovery of these interesting facts, other observers set to work, and in a short time a mass of microscopic intelligence was received relating to these beds, composed of the bodies or coverings of individually invisible beings. In Virginia there are extensive beds of siliceous marl, which consist in the main of the shields of infusoria. When a few grains of this earth are examined with a good microscope, forms of exquisite beauty and variety reveal themselves. In fact the slightest stain left by the evaporation of a drop of slightly-muddy water teems with these beautiful forms of minute existence. The towns of Richmond and Petersburg in Virginia are built upon the bodies of infusoria; the strata being several yards in thickness. The polishing powder commonly called Tripoli, and largely employed in the arts for polishing metals, furnishes us with another wonderful evidence of the vast accumulation of microscopic forms of being. This substance is obtained from Bilin in Bohemia; but it is also found in other places. It forms a series of beds fourteen feet thick, and is entirely composed of the siliceous shields of infusoria. These shields are in a state of very perfect preservation, and are supposed to have been exposed to the action of a high temperature, by which all organic matter has been driven out. It is said that a single druggist's shop in Berlin consumes yearly more than twenty hundredweight of this substance, and yet the supply is by no means exhausted. What an idea does it give us of the immensity of microscopic

life, to learn that a cubic inch of this polishing-slate, weighing 220 grains, contains upwards of forty thousand millions of individual organisms!

Of the minute dimensions of these animals, the powers of ordinary language fail in conveying an approach to an adequate idea. Yet their organization is by no means simple. They possess several stomachs and a mouth. They are furnished with a number of movable processes called cilia, millions of times more minute than the most delicate hair of the human head! Some of them possess the most exquisitely-carved and sculptured shields, consisting of a perfectly pure and colourless flint or silex. The pattern on these shields is distinct and constant for the same species; and they can thus be classified and arranged. Yet the field of the microscope is to one of these beings pretty much what England would be to a single man. Of the most minute of these wonderful beings it would require more than ten millions of millions of individuals to fill the space of a cubic inch! Within how small a compass can the Almighty Author of life enshrine that principle! 'We have been accustomed,' says Dr Mantell, 'to associate the presence of vitality with bodies possessing various complicated organs for the elaboration and maintenance of the energies of existence; but here we see perfect and distinct creatures in the condition of single globules and cells, that live, and move, and have their being, and increase in numbers with a rapidity so prodigious, and in modes so peculiar, as to startle all our preconceived notions of animal organization.'

Ehrenberg's discoveries in the same direction—namely, in the influence of microscopic life in the formation of vast deposits—lead to still more important conclusions. In 1839 he instituted special researches upon the form of the harbour of Wismar in the Baltic. The result of his investigations shows that from one-twentieth to one-fourth of the mass of deposited mud consisted of living infusoria in part, and partly of the empty shells of dead ones! In this harbour it appears that every week there is deposited upwards of 200,000 lbs. of mud. During the last hundred years there have been deposited by the running waters at Wismar 3,240,000 hundredweight of this mud. About one-tenth of this deposit consists, on the average, of infusorial animalcules! At Pillau M. Hagen found that often half the entire volume of mud consists of infusoria. He calculates that at this place not less than from 7200 to 14,000 cubic metres of pure microscopic organisms are annually separated from the waters, and deposited in the form of mud. In the course of a century this would form an accumulated deposit of from 720,000 to 1,140,000 cubic metres of infusory rock, or Tripoli stone. Ehrenberg pursued his inquiries with his all-revealing microscope upon the mud of the Nile, the fertilising properties of which have for ages attracted the notice of mankind. In all the specimens he has examined, he has found that infusory animalcules—beings of microscopic size—exist in such vast abundance, that there is not a particle of the soil left by the retiring waters of the size of half a pin's head which does not contain one, and frequently many, of these animals. How striking the idea thus furnished to us! From time immemorial, it has been customary to attribute much of the fertilising influence of these deposits to their chemical constituents derived from degraded rocks, or to decaying vegetable remains. Yet the microscope has told us, on the contrary, that it is to neither of these causes that this effect is chiefly attributable, but

rather to the multitudinous accumulation of infinitely minute living forms of animal life, wholly undiscernible to the naked eye in themselves, but in the mass constituting no insignificant portion of the solid soil. Truly it is a humbling thought for man—as year by year he plies his huge dredging machines, summoning the aid of steam, and the appliances of mechanism, to remove an aggregation of beings thousands of which would lie on the end of his finger—to reflect that he is put to all this labour and cost by the most insignificant objects in the whole range of creation! The microscope, which discloses these particulars, also seems to promise to be of service in the purposes of agriculture. The deposit of all rivers and irrigation are not always successfully resorted to by the agriculturist. Probably this instrument would inform him whether the deposit in the muddy waters of the river were suited, or otherwise, to the necessities of his fields. Particles of the mud of various rivers in many parts of the globe were sent to Ehrenberg for examination by his microscope, and it may convey an idea of the skill of this observer, and of the delicacy of microscopic research, when it is stated that though these particles did not in many instances exceed the twelfth of an inch in thickness, yet that several hundreds of distinct species were accurately made out.

Yet wide as is the prevalence of microscopic animal life, coextensive as it is with the realms of nature, the minute forms of what are now considered to be vegetables are scarcely less abundant, nor their influence and importance in the operations of nature less intense.* The microscope, when applied to the investigation of the green scum of a stagnant wayside pool, or to the mud of the ocean itself, tells us of a world of what are now considered to be vegetable forms, full of marvellous thought for us. Those plants which are included in this microscopic world are divided by botanists into two families, of which the one called *Desmidiæ* exclusively inhabit fresh water; while the others, or *Diatomaceæ*, are principally marine. Most unlike plants are these singular creatures! And indeed the zoologist and botanist have scarcely yet ceased their disputations as to which science has the strongest claim upon them for its own. From very recent researches, it appears, however, that the botanists have got the best of the day; the *Desmidiæ* and *Diatomaceæ* are now exclusively their own. In shape they resemble mathematical figures of microscopic dimensions rather than vegetable organisms. They form circles, parallelograms, triangles, to the utter overturning of our ideas about the line of beauty as applied to organized beings. From their property of withdrawing silex from its solution in the waters in which they are found, their bodies are indestructible; hence their constantly-accumulating remains are gradually being deposited in beds under the waters of the sea, as well as in lakes and ponds. 'At first,' says Dr Harvey in his agreeable Sea-Side Book, 'the effect produced by things so small—thousands of which might be contained in a drop, and millions packed together in a cubic inch—may appear of trifling moment, when speaking of so grand an operation as the

* Most probably many of the minute forms which Ehrenberg has shown to be of such importance in the preceding details, and which he considers to be animals, belong to the two families *Desmidiæ* and *Diatomaceæ*.

deposition of submarine strata. But as each moment has its value in the measurement of time, to whatever extent of ages the succession may be prolonged, so each of these atoms has a definite relation to space, and their constant production and deposition will at length result in mountains. The examination of the most ancient of the stratified rocks, and of all others in the ascending scale, and the investigation of deposits now in the course of formation, teach us that, from the first dawn of animated nature up to the present hour, this prolific family has never ceased its activity.' England may boast that the sun never sets upon her empire, but here is an ocean realm whose subjects are literally more numerous than the sands of the sea. We cannot count them by millions simply, but by hundreds of thousands of millions. Indeed it is futile to speak of numbers in relation to things so uncountable. Extensive rocky strata, chains of hills, beds of marl, almost every description of soil, whether superficial, or raised from a great depth, contain the remains of these little plants in greater or less abundance. Some great tracts of country are literally built up of their skeletons. No country is destitute of such monuments, and in some they constitute the leading features in the structure of the soil. The world is a vast catacomb of *Diatomaceæ;* nor is the growth of those old dwellers on our earth diminished in its latter days.'

Dr Hooker gives a remarkable account of the abundance of these microscopic vegetables—if such they shall be ultimately allowed to remain. The waters—nay, even the ice of the whole Antarctic Ocean, between the parallels of 60 and 80 degrees south, abound in them. In such countless myriads do they people these waters, disadvantageous though the external conditions appear to be to the multiplication of life, that the sea was everywhere stained of a pale ochreous brown; in some cases causing its surface, from the locality of the ships as far as the eye could reach, to assume a pale-brown colour. Though thus peculiarly abundant in the Icy Sea, these microscopic plants are probably uniformly dispersed over the whole ocean; but being invisible from their minuteness, can only be recognised when washed together in masses, and contrasted with some opaque substance. On this vegetation the whole of the animal kingdom which swarms in the waters of the Antarctic Ocean probably ultimately depends for its existence. What a link—rather what an amazing system of links—is that in nature which connects by an undisseverable bond the microscopic plant with the immense forms of animal life which people the ocean! The death and decomposition of this minute vegetation—for it, too, like all terrestrial things, has its allotted period—are gradually producing a submarine deposit or bank of vast dimensions. It flanks the whole length of Victoria Barrier—a glacier of ice some 400 miles long; and it occupies an area of 400 miles long by 120 broad. All the soundings over this deposit—and the lead sometimes sunk two feet in it—brought up nothing, or scarcely anything beside Diatomaceæ. The Infinite Mind alone can enumerate the individuals lying in this deep sea-grave.

This is much; but this is not all that the microscope has revealed to us as to these wonderful plants. The Diatomaceæ perform long journeys through the air! They have been found floating in the atmosphere that overhangs the tropical Atlantic. Darwin, during the voyage of the *Beagle*, collected an impalpable dust which fell on Captain Fitzroy's ship when to

the west of the Cape de Verd Islands; and this, on examination with the microscope, proved to consist of the skeletons or framework of Diatomaceæ. These remains must have been ejected from some volcano then in activity. In consequence of their siliceous skeletons they resist the action of fire, and form with infusoria constituents of the pumice and ashes which are vomited from the burning crater. 'In fact,' says Dr Harvey, 'it is difficult to name a nook on the face of the earth, or in the depths of the sea, where they are wholly absent, either in a dead or living state; and their office in the general economy, besides affording food for the humble members of the animal kingdom, seems to be the preparation of a soil for a higher class of vegetables. This they effect by the minute division of the siliceous particles laid up in their tissues, and probably make this really insoluble earth (silex) more fit for assimilation by other plants. We must also suppose them endowed, like other vegetables, with the power of decomposing carbonic acid and liberating oxygen, and thus in countless myriads exercising no mean place in the household of nature. Like their mistress, these her humblest servants work in secret. We know not what we owe them. But continued as their existence is through all time, and dispersed as they are through every part of the world, even where the ice-bound sea is peopled by nothing else, we may rest assured that they perform some work which renders them worthy the care of a Providence who creates nothing superfluous.'

Let us again return to the crust of the earth, and inquire in another direction what part minute organization of a different kind has performed in rearing up its massive substance. Let the reader mentally follow the track we shall point out to him, and endeavour, if he can, to estimate the cubic contents of such a mass of solid matter if he would gain an idea of the importance of microscopic life in the work of creation. Commencing at Dover, or Beachy Head, follow the course of the North or the South Downs up to their point of junction in the east of Hampshire, where they are joined by another branch of similar downs commencing near Weymouth. These three chalk ranges enclose an area which includes all the north of Hampshire, and the larger portion of the south of Wiltshire. Yet this is not all. By the Marlborough Downs, by the Ilsey Downs and the Whitehorse Hills, the chalk runs into Oxfordshire, and continues, with some interruptions, through Buckinghamshire, Bedfordshire, and Cambridgeshire into Norfolk. Neither is this all. The lofty cliffs between Cromer and Huntanton, the Wolds of Lincolnshire and those of Yorkshire, all are chalk. Southward, let the tourist say how much of the Isle of Wight is chalk. Chalk along the coast, chalk in hills, chalk in valleys—chalk forms the Inkpen Beacon, Wilts, a thousand feet above the sea, chalk forms the Needles crumbling into it; all is chalk, nothing but chalk—chalk and flints! Yet stay—take up a pinch of the white mass, lay a particle of it no bigger than a pin's head on the field of the microscope, and what a startling spectacle discloses itself! The dust is thick with organized forms. All is shells and corals! The Needles are shells and corals—the Downs are shells and corals! Underneath the thin green turf of the Wolds lie shells and corals. The great Humber rolls over shells and corals. The white walls of England are—shells and corals.

Shakspeare's cliff is shells and corals. The waters which sweep round Margate, Ramsgate, and Dover, white as milk, are full of the remains of shells and corals! A million of shells and corals lie in a cubic inch of chalk! What inconceivable millions in a hill, and what in the whole range! And these of the most beautiful forms, all once replete with life! How large a part of England's southern and western coast is made up of individual beings more minute than a pin's point! These minute beings—and the idea is still more strange—approach us in our homes. Do we whitewash our ceilings, it is with shells and corals! Shells and corals, it is said, come to us in our London milk! Shells and corals form the beautiful glazing of a lady's card, and oftentimes the ornamental covering of her work-boxes or show-books! The doctor sends us shells and corals in his physic, and the confectioner, as we are told, in his comfits! The microscope, skilfully applied, makes all this plain, and reveals to us in a language appreciable to the eye, though barely capable of being fully comprehended by the mind, how vast a share in the operations of nature the Creator has assigned to beings so infinitely minute.

The *Foraminifera*, of which these shells chiefly consist, swarm in inconceivable numbers in our present seas, and are constantly adding largely to submarine deposits. The individuals of a very minute species, called, from their resemblance to a grain of millet seed, *miliola*, entirely compose several thick beds of a rock called *calcaire grossier*, in the neighbourhood of Paris. A cubic inch of this stone from the quarries of Gentilly contains, on an average, 58,000 of these minute shells, and the beds are of great thickness and considerable extent. 'It may even be asserted,' says Professor Ansted, 'without fear of contradiction, that the capital of France, as well as the towns and villages of the neighbouring departments, are almost entirely built of Foraminifera; and these little fossils are scarcely less abundant in other tertiary formations, extending in the south of France from Champagne to the sea; and being found also in the basins of the Gironde, and again in that of Vienna.' Dr Buckland has well observed that the remains of such animalcules have added a thousand times more to the mass of materials which compose the exterior crust of the globe than the bones of elephants, hippopotami, and whales.

It has long been known that in times of scarcity certain savage nations have been in the habit of eating earth, either by itself or mixed with their other food, in order to eke it out. Humboldt, in his recent edition of the 'Aspects of Nature,' makes the following observations upon this point:—'The earth which the Otomacs eat is an unctuous, almost tasteless clay, true potter's earth (Ehrenberg detected infusoria in it), of a yellowish-gray colour. They select it with great care, and seek it in certain banks on the shores of the Orinoco and Meta. They distinguish the flavour of one kind of earth from that of another—all kinds of clay not being acceptable to their palates. They knead this earth into balls measuring from four to six inches in diameter, and bake them before a slow fire until the outer surface assumes a reddish colour. Before they are eaten the balls are again moistened.' During the intervals of the periodical swellings of the rivers the fishing is stopped,* and the Otomacs for two or three months are

* These savage people obtain their fish by shooting them as they rise with a bow and arrow with infinite dexterity.

deprived of their ordinary means of subsistence—fish and turtles. They then devour enormous quantities of earth. Humboldt found in their huts considerable stores of these earth-balls piled up in pyramidal heaps. An Indian will consume from three-quarters of a pound to a pound and a quarter of this food daily, and in fact it constitutes their main support during the rainy season. So partial do they become to this food, that even in the dry season, when there is abundance of fish, they still partake of some of these earth-balls by way of a *bonne bouche* after their regular meals. If an Otomac be asked what are his winter provisions—the term winter in the torrid parts of South America implying the rainy season—he will point to the heaps of clay in his hut. It is often found necessary in other tropical countries to shut children up, in order to prevent their running into the open air to devour earth after recent rain. 'The Indian women,' says Humboldt, 'who are engaged in the river Magdalena, in the small village of Banco, in turning earthenware pots, continually fill their mouths with large lumps of clay, as I have frequently observed, much to my surprise.' In Guinea the negroes are said to eat a yellowish earth, which they call *caouac;* and when they are carried as slaves to the West Indies, they even endeavour there to procure for themselves some similar species of food, maintaining that the eating of earth is perfectly harmless in their African home. It appears, however, that this luxury is not so harmless, for the West Indian planters forbid it to their slaves, whose health was becoming impaired thereby. Yet the treat could not be altogether forborne, and a species of reddish-yellow earthy substance was recently sold in the market of Martinique. So passionately fond do these poor creatures become of this singular food, that no punishment can prevent them from devouring it. In the island of Java earth-cakes are sold as commonly as tarts in the streets of our towns in Britain. In Samarang, a species of edible earth is tastefully prepared in the form of tubes, resembling sticks of cinnamon; and in Popayan we are told that calcareous earth is sold in the streets as an article of food for the Indians. This is eaten together with the Coca, the leaves of a tree which have an intoxicating property. Humboldt remarks that this practice of eating earth is common throughout the whole of the torrid zone, among the indolent races who inhabit the most beautiful and fertile regions of the earth.

The practice is not, however, confined to the southern regions of the globe. In Finland, earth is mixed with the bread. It consists, says Humboldt, of empty shells of animalcules, so small and soft, that they break between the teeth without any perceptible noise. The inhabitants of Swedish Lapland are also in the habit of mixing with their food in times of dearth a peculiar substance resembling earth, which is found under a bed of decayed moss. This they call Berg or mountain-meal. On examination with the microscope, it has been found to consist almost entirely of minute organized forms, the presumed presence of organic matter in which has been considered to form the chief of the useful properties of the substance as an article of food. In a letter written to Stanislaus Julian by a Chinese missionary, an account is given of a substance called Fossil-flour by the Chinese. In times of great dearth it is sold at a certain rate per pound. It is used in the form of powder, mixed with wheat or rice-flour, and flavoured with salt or sugar. It was only had

recourse to in times of great scarcity. Those who partook of it generally complained of a weight at the stomach, and other uncomfortable feelings. It is said they could subsist on it, mixed with other food, for two months, when without it the same quantity of food would only last for one month. Examined by the microscope, this substance was also found to consist of the remains of organized beings. Thus, then, the microscope discloses to us the singular fact, ascertainable by no other means, that in these remarkable instances—that is, in all which have been carefully examined—of the adoption of a mineral food in times of scarcity, mankind in its rudest state have been singularly directed to a choice of a similar material.

While upon the subject of microscopic disclosures, allusion may be made to some, the singularity of which deserves our notice. On the 31st of January 1687 a great mass of a paper-like black substance fell with a violent storm from the atmosphere near the village of Rauden in Courland. It was seen to fall, and after dinner was found at places where the labourers at work had seen nothing similar before dinner. This meteoric substance excited great curiosity at the time, but all attempts to unravel its constitution were unsuccessful. An able chemist considered it to be a meteoric mass. Some of this substance was deposited in the Berlin Museum, and lay there, its structure a problem to the learned. Ehrenberg at length took a piece of it, and applied the microscope to its elucidation. Fortunately with a successful issue. It was found that this paper-like mass consisted of a compactly-matted heap of minute organisms—a few confervæ, and about thirty species of infusoria. Thus after a puzzle of more than 150 years, the microscope came to the aid of the learned, and in a few minutes solved the problem. In 1736, after an overflow of the river Oder in Silesia, a mass of paper-like substance was found which excited some attention, and was called Natural Paper. A portion of it was preserved in the library at Breslau. A little more than a century elapsed before its true nature was made out, and again by the indefatigable Ehrenberg with his all-penetrative microscope. This substance, which is called by Humboldt Natural Flannel, was found to consist of a filamentous tissue of confervæ and nineteen species of infusoria. A somewhat similar mass was recently found in one of our British rivers, and its true nature was ascertained in a similar manner. In a letter to the editors of the 'Annals of Natural History' for 1839, a small piece of a curious substance resembling white dressed glove-leather was forwarded. It was found in a meadow at Schwartzenberg. The outside resembled fine paper in texture, or more nearly soft-dressed glove-leather; it had a glistening surface, and was smooth to the touch, and as tough in texture as ordinary unsized paper. The microscope unfolded its structure, and it was found to consist of a compact belt of confervæ bleached by the sun on the upper surface, and containing a number of siliceous infusoria. Vulgar superstition in a past age would have, and in all probability did attach a supernatural character to all these productions. How many a fairy tale does science resolve into hard facts and ungilded expressions of truth; and the instrument which is at present occupying our attention has contributed its share to the dethronement of fiction and the erection of fact.

It has been seen what part—how vast and important!—microscopic life

has performed and continues to act in reference to the solid structure of the globe. It may be useful to suggest a few thoughts as to its multitudinous presence in the waters of the ocean. And here, not less than in other instances, the microscope enables us to perceive the truth and force of the expressions of the poet—

> 'See through this air, this ocean, and this earth,
> All matter quick, and bursting into birth.'

Before, however, we draw attention to a few facts connected with the abundance of microscopic life in the waters, it may be useful to make the reader acquainted with one or two members of this immense family, the individuals of which outnumber the sands and the stars of heaven. The term infusoria, as applied to these minute forms of existence, may appear at first sight wholly out of place, since the existence of these minute creatures is as universal as the waters of the earth, and by no means confined simply to infusions of vegetable substances. Its origin is thus explicable. The presence of these microscopic organisms was first detected by that instrument in water containing vegetable matter; and for some time it was considered that they were peculiar to certain infusions. The name still remains, and is useful both as a general designation, and also as a historical record of the first revelation of the world of minute life in the waters. The characters essential to this group of organized life have been described to be the following:—Their bodies are destitute of true articulated or jointed limbs and locomotive members; their movements are performed by means of peculiar processes resembling minute hairs, called *cilia*, from their resemblance to those of the eyelash. These minute processes are arranged in different methods: in some they are distributed over the general surface of the body, in some they are arranged in zones or circles on its upper part, and in others they are disposed in a circle around the mouth or aperture of the digestive organs. The arrangement of these cilia, and the structure of the digestive apparatus, supply the elements for arranging infusoria. One class is called the many-stomached or *Polygastria*, the other the *Rotifera*, from their apparent rotatory movements when seen on the field of the microscope, giving to them somewhat of the appearance of a wheel revolving on its axis. The polygastric animalcules form a class which includes some of the most minute forms of animal life revealed by the microscope. Some, however, are visible to unassisted sight. Their home is the waters; and in these, fresh and salt, they often accumulate in such prodigious numbers, that the mind shrinks from applying the powers of figures to their calculation. Yet these minute beings, which the most powerful microscope just brings within the narrow confines of human perception, live, move about, and show a wonderful degree of vital activity. Their movements are all effected by the assistance of the tiny cilia; and when it is mentioned that some of the minuter forms of polygastric animalcules are actually less than the full stop of the present paragraph, an idea of the excessive minuteness of the locomotive apparatus of such a creature may be formed. So active are these cilia, and such bustling little creatures are those to whom they belong, that a most animated spectacle is presented to the eye in the examination of almost any drop of stagnant water placed on the microscope. The observed of all observers—whose

sight is sufficiently acute, we should add, are the active little members of the group called *monads*. There is something about these minute organisms peculiarly attractive to the microscopic observer. Beneath his eye, in the tiny drop of liquid which lies on the glass-plate below his object-glass, numerous little points are seen sailing gaily about and with the most *nonchalant* air, as though life went easily enough with them; now darting rapidly across, now leisurely moving from one spot in this mighty sea to another. Of such Ehrenberg has said that a selected drop of water may actually contain as many as there are men upon the surface of our great globe itself! These minute creatures are not destitute of colour. Some are apparelled in shining green, others in pink or yellow. Perhaps one of the most interesting of the group is that originally discovered — in spite of the imperfection of his instruments — by Leeuwenhoek. It was then thought to be a single animalcule, but it now appears that it consists in reality of a group enclosed in a little globular case. Each is a distinct individual, yet each, in some mysterious way, maintains an organic connection with its companions. This group of monads rolls round with a peculiar revolving movement as it passes across the microscopic field; hence its name—*volvox*. Within the outer case may be seen frequently six or eight small ones. These are young *volvoces* preparing to come out into the world. This little colony, urged forward by its ciliary processes, passes from place to place in the waters, and effects all the functions of its narrow sphere of life as perfectly as if it were a group of beings of infinitely more importance and higher organization. It is a good illustration of the fact, that all the works of God are perfect. The smallest living object in the world is in itself, and for the part it is destined to perform in nature, as perfect as the largest. Night and day seem both alike to these polygastric animalcules. No matter to the monad whether the great luminary of the earth lights up the unwholesome waters in which its existence is carried on, or whether the darkness of night overlies them. Its circling movements seem never to be wearied, and appear to cease only with life itself.

The rotifera form a class not less interesting, and probably better known than the polygastria. The organization of these animalcules is much higher than that of the polygastric. They are found, however, in similar situations; and in almost every infusion of vegetable matter which has been allowed to decompose, the remarkable and beautiful Wheel-animalcule may after a time be discovered. This minute creature—*Rotifer vulgaris*—excited the most intense curiosity on its first discovery, in consequence of the surprising appearance it presented when viewed by the microscope. At the anterior part of the body the learned beheld two little organs exactly resembling wheels, and, like them, moving apparently upon their axes! The most minute investigation failed to render this phenomenon, which was as extraordinary for a living animal as for a man's head to be always turning round on its axis—in a word, a motion of the kind seen, and which any reader may see if he will get a microscope and search for the creature in stagnant water, was impossible in an organized being, the union and connection of whose parts forbid the idea. Yet the motion existed, and remained long a puzzle to philosophers. It is now universally allowed to be an optical illusion. At the anterior part of the body of this animalcule, there are two circular rows of cilia rather larger in

size than those of the polygastria. The combined appearance of a number of cilia moving in a particular direction, and the alternate appearance and disappearance of the several processes as they move, contributes to impress the eye with the image of a wheel in motion. The object of this movement it is easy to see if we will sprinkle a little finely-powdered carmine upon the water in which the animalcules are contained. If the coloured grains are watched, it will soon become evident that our rotifers are, though so minute, a very voracious set of creatures. The effect of the cilia is to produce such a current in the surrounding waters as to form a miniature whirlpool, and the grains are rapidly sucked into it. In this manner hundreds of unfortunate animalcules are drawn into the dangerous vortex, and yet more formidable digestive apparatus of the rotifer. Surprising though it may appear, this wheel-animalcule, not the thirty-sixth part of an inch long, possesses both jaws and teeth! Some of them have a very powerful pair of nippers, by which they seize and tear to pieces their living prey; and others have an equally efficient crushing apparatus, which reduces to pulp the bodies of luckless beings of the bigness of a needle's point, or smaller! The multiplication of the wheel-animalcules is extremely rapid. They are produced from germs. Some are viviparous, others oviparous; and twenty-four hours is a sufficient period for an individual to be born, be developed, and itself become a parent.

The revivification, as it has been called, of the rotifera has long engaged the attention of microscopical observers. That the bodies of these animalcules should retain the principle of life after the lapse of a considerable period, during which they remained to all appearance dead, appeared so startling, that few were disposed to believe it possible. Yet a number of experiments seemed to leave little doubt on the matter. Fontana, in his treatise on poisons, distinctly states that he succeeded in restoring to animation, after two hours' immersion in water, a wheel-animalcule which had lain in a dry and motionless condition for the space of two years and a half! More recently a careful and experienced observer, Doyère, performed a number of beautiful experiments with the intention of elucidating this phenomenon. He comes to the result, that under certain circumstances these wonderful animalcules undoubtedly may be revived after remaining in an apparently dead state. He states that their dry and motionless forms may even be exposed for three or four weeks in barometric tubes in vacuo, so as to withdraw, one would suppose, every particle of moisture from them, and yet revivification will subsequently take place! It appears, in fact, that the sole condition necessary to their reawakening is the perfect integrity of their organic structure and continuity. In Ehrenberg's great work on 'Infusoria,' this subject is fully entered into. He believes that notwithstanding all the means of desiccation employed, the organization-fluid still remains in the apparently dead animal. He contests the hypothesis of latent life; for death, he says, 'is not life in a torpid state, but the absence of life.' And Humboldt evidently embraces the same opinion, for he says, 'the apparent revivification of the rotifera, and of the siliceous-shelled infusoria, is only the renewal of long-enfeebled vital functions—a condition of vitality never entirely extinguished.'

Leaving the infusoria after this short special consideration of them, we

may apply the microscope to the waters of the ocean, as the astronomer his telescope to the unfathomable heavens, and with a very similar result. For as the one discovers in the depths and far out-lying regions of space worlds and spheres innumerable, so the other beholds, wide as the waters of the ocean roll, a world of minute organic life equally beyond his highest powers of enumeration. Scoresby throws out an idea as to the numbers of the minute forms of life in the Arctic Ocean, which has always appeared to us to furnish the most astounding view of this inconceivable multitude. In these seas the water generally—like all water free from earthy impurities—is of a deep ultramarine hue. But parts of it, often covering an area of twenty or thirty square miles, are rendered green, and even turbid, from the quantity of minute animalcules contained in them. It was found that these creatures extended down to the depth of 1500 feet. Now Scoresby estimates that it would require 80,000 persons, working unceasingly from the creation of man to the present day, to count the number of minute beings contained only in the space of two miles of that turbid water! What, then, must be the sum which shall represent the aggregate of organic life in the waters of the Polar Sea, where one-fourth part of the Greenland Sea, for ten degrees latitude, consists of water thus surcharged with animalcules! These organisms differ from those we have been just describing, and belong to the tribe of medusæ. On the coast of Chili, says Mr Darwin, 'a few leagues north of Concepcion, the *Beagle* one day passed through great bands of muddy water, exactly like that of a swollen river; and again, a degree north of Valparaiso, when fifty miles from land, the same appearance was still more extensive. Some of the water placed in a glass was of a pale-reddish tint; and examined under a microscope, was seen to swarm with minute animalcules darting about and often exploding. They were exceedingly minute, and quite invisible to the naked eye, only covering a space equal to the square of the thousandth of an inch. Their numbers were infinite, for the smallest drop of water which I could remove contained very many. In one day we passed through two spaces of water thus stained, one of which alone must have extended over several square miles. What incalculable numbers of these microscopic animals! The colour of the water, as seen at some distance, was like that of a river which has flowed through a red clay district; but under the shade of the vessel's side it was as dark as chocolate. The line where the red and blue water joined was distinctly defined. The weather for some days previously had been calm, and the ocean teemed to an unusual degree with living creatures.' Poeppig mentions his having observed a somewhat similar phenomenon near Cape Pilares. In this instance the bed of discoloured water was tinged of a reddish colour for a space twenty-four miles in length and seven in breadth. Seen from the mast-head, the sea assumed a dark-red tint, as though the blood of some marine monster the multitudinous waters did 'incarnadine, making the green one red.' As the ship proceeded, the tint changed to a brilliant purple, and the wake of the vessel was a delicate rose colour. The water is described as having been perfectly transparent, but small red dots could be seen in it moving in spiral lines. Even in the dark abysses of the ocean, at depths where hitherto it has been considered that the functions of animation could not be exercised, 6000 feet below the surface, the existence of minute organic life has been

distinctly proved in the recent antarctic voyage of Sir James Ross. Humboldt's remarks on this vast prodigality of animal life in the ocean are very pertinent to our subject:—'It is,' he says, 'still undetermined where life is most abundant: whether on the earth or in the fathomless depths of the ocean. Ehrenberg's admirable work on the relative condition of animalcular life in the tropical ocean, and the floating and solid ice of the antarctic circle, has spread the sphere and horizon of organic life before our eyes. Siliceous-shelled *polygastria*, and even *coscinadiscæ*, alive with their green ovaries, have been found enveloped in masses within twelve degrees of the pole; even as the small black glacier flea and podurellæ inhabit the narrow tubules of ice of the Swiss glaciers, as proved by the researches of Agassiz. Ehrenberg has shown, that on some microscopic infusorial animalcules other species live parasitically; and that in the *gallionellæ* the extraordinary powers of division and development of bulk are so great that an animalcule invisible to the naked eye can in four days form two cubic feet of the Bilin polishing slate.'

That natural phenomenon—beautiful in any latitude, but gorgeous beyond description in the tropics—the phosphorescence of the sea, appears due in great part to the light-emitting powers of innumerable hosts of minute animals sporting on the wave. Coleridge well describes this phenomenon in his 'Ancient Mariner:'

'Beyond the shadow of the ship
I watched the water-snakes:
They moved in tracks of shining white,
And when they reared, the elfish light
Fell off in hoary flakes.

Within the shadow of the ship
I watched their rich attire:
Blue, glossy-green, and velvet-black,
They coiled and swam; and every track
Was a flash of golden fire.'

'Indelible,' says the last-quoted world-renowned traveller, 'is the impression left on my mind by those calm tropical nights of the Pacific, where the constellation of Argo in its zenith, and the setting Southern Cross, pour their mild planetary light through the ethereal azure of the sky, while dolphins mark the foaming waves with their luminous furrows.' There has been much discussion as to the cause of this phenomenon; but the microscopist and the chemist seem to have settled it between them by a sort of compromise. For it now becomes apparent that it is due both—as the chemist affirms—to the decomposition of organic matter (Schönbein says, by the agency of ozone), and also to that power of emitting light which is the peculiar attribute of many marine creatures, and particularly, as the microscopist has discovered, of an innumerable host of tiny medusæ, and the ever-present infusoria. Ehrenberg adopted an ingenious method of procuring a collection of luminous infusoria. He passed a large quantity of fresh sea-water through a filter, and by collecting what was left upon it he soon accumulated a vast number of these light-emitting creatures. The appearance of these minute torch-bearers of the seas, beheld on the darkened field of the microscope, is highly interesting. A minute drop of an acid will irritate them, and cause the development of a mimic flash instantly. "When,'

observes Ehrenberg, 'the *Photocharis* is irritated, in each cirrus a kindling and a gleaming of separate sparks may be observed, which gradually increase and at length illuminate the whole cirrus, until the living flame runs also over the back of this nereid-like animalcule, making it appear under the microscope like a burning thread of sulphur with a greenish-yellow light. The manifestation of this wreath of fire is an act of vitality, and the whole development of light an organic vital process, which exhibits itself in infusorial animals as a momentary spark of light, and is repeated after short intervals of rest.' This light has been generally considered to be electro-magnetic; and it has been well remarked, that if such is the case, these minute infusoria must be capable of an enormous electric tension of their organs, to enable them to shine so vividly in a medium which forms of itself such a powerful conductor of the electric energy. In addition to the light-emitting living organisms, the microscope has detected in phosphorescent water vast quantities of torn, jagged shreds of organic matter, probably the remains of medusæ, which shine by virtue of a chemical decomposition set up in all dead organic matter. When Humboldt and his companions bathed at Cumana, in the Gulf of Cariaco, and walked on the solitary beach on emerging from the waters, parts of their bodies remained luminous from the fibres and membranes which adhered to the skin, nor did they lose this luminosity for some minutes.

In addition to the diatomaceæ, the vegetable kingdom has also its minute representatives abounding in numbers infinite in certain seas. A very interesting fact in connection with this is the recently-established one of the colour of the Red Sea being ascribable to the presence of an inconceivable multitude of minute vegetable bodies. The fact that these waters are in reality coloured has often been questioned, and travellers have denied that any such colour is present as to justify the application of the title. Others, however, have been more fortunate in witnessing the phenomenon, and their accounts fully confirm what history has long handed down to us —that a red shade of a very singular character is in reality present in the waters. Dr Harvey ingeniously reconciles these conflicting statements, by supposing that the observations were not made at the same season of the year, for if the colour depends upon the presence of vegetable matter, it is highly probable that it will vary in degree at different seasons. That these waters are occasionally coated, says the same writer, with a scum of red colour, is certain, and portions of it have been brought home, and carefully examined by several naturalists. M. Montagne, employing the microscope to the investigation of the subject, has given an elaborate account of specimens which were forwarded to him for examination, and has distinctly proved that the scum is entirely made up of very minute algæ, consisting of delicate threads, collected in bundles, and containing rings of some red matter within a slender tube. During the voyage of the *Beagle*, Darwin's attention was called to a reddish-brown appearance in the sea; the whole surface of the water, when viewed by a low microscopic power, seemed as if covered with bits of chopped hay with the ends jagged. These, on examination, proved to be minute algæ, and were of the same species with that found in the Red Sea. The numbers of these pelagic vegetables must be infinite. The *Beagle* passed through several bands of them, one of which was ten yards wide, and, judging from the mud-like colour of the

water, at least two and a-half miles long. Sailors give the phenomenon the name of 'sea sawdust.'

MM. E. Dupont and Montagne have given a curious account in the Comptes Rendues of the redness of the Red Sea, and its cause. 'I entered the Red Sea,' says one of these gentlemen, 'by the straits of Babelmandel on the 8th of July 1843, on board the Arabian steamer. On the 15th the burning sun of Arabia suddenly awoke me with its brilliancy unannounced by dawn. I was leaning mechanically out of the poop windows, to catch a little of the fresh air of night before the sun had devoured it, when imagine my surprise to find the sea stained red as far as the eye could reach behind the vessel! If I was to attempt to describe this phenomenon, I would say that the surface of the ocean was entirely covered with a close thin layer of fine matter, the colour of brick-dust, but slightly orange. Mahogany sawdust would produce such an appearance. When put into a white glass bottle, it became in the course of a day deep violet, while the water itself had become a beautiful rose colour. This appearance extended from Cosseir, off which we were at daybreak on the 15th of May, to Tor, a little Arabian village, which we made about noon the next day, when it disappeared, and the sea became blue as before. During this time we must have passed through about 256 miles of the red plant.'

Leaving the domains of the waters, and the regions of the earth, let us direct a few thoughts toward a subject at present ill understood, but at the same time highly interesting—life in the air. It is to be remarked, however, at the outset, that it is inconceivable that any species of either vegetables or animals should constantly live in the air. While the earth is the great dwelling-place, and the sea the broad home of an innumerable multitude of those minute organisms to which we have directed attention, the air is merely a temporary residence to any of them. No animal or plant with which we are acquainted, however minute, can ever carry on the functions of life in the air. Vegetable and animal existence, in its minutest forms, has exclusively a relation of the earth or to the waters as the scenes in which the development and propagation of such life is to have its place. When, therefore, we speak of life in the air, we desire simply to express the fact—and a wonderful fact it is—that the atmosphere is at all times charged with minute and invisible particles of organic existence, which, upon falling on the earth, or into the waters, spring at once into activity. Regarding the manner in which such minute organisms are received by the atmosphere, there prevails some difference of opinion and much obscurity. A number of circumstances are, however, on record, which show that the force with which bodies are lifted into the air is abundantly more than adequate to account for the elevation of such light particles as the germs of a microscopic plant or animal. The records of meteorology teem with instances of the transporting powers of aërial currents, which render the matter positively certain. Thus we are told that even fish and similar substances have been carried up into, and then precipitated from, the atmosphere. On the 9th of March 1830, in the isle of Ula in Argyleshire, after a heavy rain, numbers of small herrings were found scattered over the fields: they were perfectly fresh, and some not quite dead. In a town in France, some distance from Paris,

a violent storm took place, and when the morning of the day following broke, the streets were found strewed with fish of various sizes: the mystery was soon solved, for it was discovered that a fishpond in the vicinity had been blown dry, and only the larger fish left behind. Dust, ashes, frogs, and other such bodies, have also been lifted into and dropped from the atmosphere at different times and in different places. What marvel, then, if the thin and delicate structures which form the life-beginnings of an animalcule or a fungus should be for ever found floating around us, present under all circumstances, and ready, wherever opportunity offers, to drop and be developed into their highest activity?

We are too apt to regard the atmosphere as consisting only of air, forgetful of the innumerable organic particles—some living, or ready to live, and some dead—which float in the folds of its all-enveloping mantle. Humboldt's remarks regarding microscopic life in the air deserve extraction:—'Wheel-animalcules, and a host of microscopic insects, are lifted by the winds from the evaporating waters below. Motionless, and to all appearance dead, they float upon the breeze, until the dew bears them back to the nourishing earth, and bursting the tissue which encloses their transparent rotating bodies, instils new life and motion into all their organs. The yellow meteoric sand or mist (*dust nebulæ*) often observed to fall in the Atlantic, and not unfrequently borne in an easterly direction as far as Northern Africa, Italy, and Central Europe, consist, according to Ehrenberg's brilliant discovery, of agglomerations of siliceous-shelled microscopic organisms. Many of these float, perhaps for years, in the highest strata of the atmosphere, until they are carried down by the Etesian winds, or by descending currents of air, in the full capacity of life, and actually engaged in organic increase by spontaneous self-division. Together with these developed creatures, the atmosphere contains countless germs of future formations: eggs of insects and seeds of plants, which, by means of hairy or feathery crowns, are borne forward on their long autumnal journey. Even the vivifying pollen scattered abroad by the blossoms is carried by winds and winged insects over sea and land to the distant and solitary plant. Thus wheresoever the naturalist turns his eye, life, or the germ of life, lies spread before him.' What an instructive lesson as to the universal presence of these minute invisible germs quick with life, and awaiting the combination of only a few simple circumstances to display their vital energies, is afforded us by simply exposing to the air a drop or two of water containing a very small proportion of organic matter in solution! It is one of the most wonderful spectacles in the world to behold, after a little lapse of time, the peopling up of this drop of fluid with living beings not to be seen in it before.

We shall content ourselves with a short review of a few of the more remarkable phenomena which reveal to us the fact, that the realms of air are peopled with germs and seeds of animal and vegetable life, which float upon every breeze, are wafted up and down the heavens, round and about the earth. The history of the extraordinary tribe of fungi supplies many singular instances of the presence in the air of innumerable particles ready to burst into life immediately upon their alighting on a suitable matrix. Nothing, in fact, is more wonderful than the apparent omnipresence of fungus-germs in the air. A morsel of ripe fruit, a little water spilt on

a crumb of bread, a drop of stale ink, a neglected bottle of medicine, afford ample evidence of the activity of this teeming life-world around us. In a very short time a delicate velvet-like covering envelops the decomposing mass, and presently acquires the utmost luxuriance of growth. What a scene is presented when we point the eye of the microscope to such objects! Myriads of delicate forms stand up in jaunty attitudes, rearing their delicate filaments over the decaying mass on which they are living in luxurious plenty. Beneath the observer's eye they multiply, they lengthen, they swell, they burst, and scatter their light and invisible germs into the ambient air! A wonderful race are the earth's scavengers —the fungi! Fries, the great fungologist, writing of them, says, 'their sporules are so infinite (in a single individual of *Reticularia maxima* I have reckoned above 10,000,000), so subtile (they are scarcely visible to the naked eye, and often resemble thin smoke), so light (raised perhaps by evaporation into the atmosphere), and are dispersed in so many ways (by the attraction of the sun, by insects, wind, elasticity, adhesion, &c.), that it is difficult to conceive a place from which they can be excluded.' Germs of minute fungi are in the air we breathe, for they have been found living within the lungs of a living man: they are in the waters also, for a fungus envelops with its deadly folds the fish of our ornamental ponds, and suffocates them: they descend wherever an ingress presents into the bowels of the earth itself, for a luminous fungus lights the coal mines of Dresden, and turns the regions of darkness into the semblance of a begemmed and illuminated enchanter's palace.

The presence of minute forms of animal life in the air is not less certain than that of vegetables. The atmosphere at St Domingo is described by Darwin as generally hazy, and this is attributed by him to the falling of an impalpably fine dust, which was found to have slightly injured the astronomical instruments. Darwin found no less than fifteen different accounts of dust having fallen on vessels when out in the Atlantic. From the direction of the wind whenever it has fallen, and from its having fallen during those months when the harmattan is known to raise clouds of dust high into the atmosphere, it appears probable that the dust chiefly comes from Africa. This dust, on microscopic examination, proved to consist in great part of infusoria, with some of the diatomaceæ. Yet, singularly enough, Ehrenberg could not detect in it many of the infusoria peculiar to Africa, while he found in it two species which hitherto he knew as living only in South America. This organic dust is described as falling in such quantities as to render dirty every part of the ship, and to create much annoyance and inconvenience to the eyes. Vessels are said to have even run ashore owing to the obscurity of the atmosphere. It has fallen on ships when several hundred, and even more than a thousand miles distant from the coast of Africa. A somewhat similar phenomenon was witnessed at Genoa on the 16th of May 1846. Dust fell from the atmosphere after a storm, which was collected by Professor Pictet, and sent to Ehrenberg for microscopic examination. Ehrenberg found that it was in every respect identical with that met with off the Cape de Verd islands. Above forty species of microscopic infusoria were detected in it. Ehrenberg observes, that it is natural to suppose that these dust-clouds are of African origin;

but they contain, besides continental infusoria, several marine organisms, which are met with only in seas, and never in fresh water.

The phenomenon of coloured snow has long been familiarly known to those acquainted with popular science; and perhaps it may surprise some who have been accustomed to look upon the cause of its colour as of vegetable nature, to find it here noticed under the head of animal life in the air. It will be found, however, that both views—the vegetable and animal—of the colouring matter of red and green snow—are right when combined. Sir John Ross collected red snow upon a range of arctic hills rising about 800 feet above the level of the sea, and Sir W. E. Parry found the same phenomenon when investigating these regions in 1827. He had previously observed that the impressions of the loaded sledges were of that colour, but now he noticed that the footsteps of the party produced the same effect. Wherever heavy pressure was made upon the snow, the blood-like stain appeared, and every impression of their feet was tinged with crimson. Sometimes the colour was paler, approaching to a salmon hue. In March 1808 rose-coloured snow fell in the Tyrol and Carinthia; and over Carnia, Cadore, Belluno, and Feltri, to a depth of nearly six feet. Green snow has also occasionally been seen. Found observed by Martins in Spitzbergen under the following circumstances:—The surface of the snow was natural, but the impressions of their footsteps displayed a coloured appearance, and a little depth below this the snow seemed as if it had been watered with a green decoction. When this snow was melted, the water was slightly tinged. The minute organization which all allow to be the cause of this phenomenon, must be present in such cases in inconceivable numbers. Upwards of two millions and a half of these bodies are required to cover a surface not exceeding a square inch! The colouring matter has been by some considered to be a microscopic member of the vegetable family—the *Algae*, and has been called accordingly *Protococcus nivalis*. On evaporation of the snow upon a piece of white paper, the colouring matter was left in minute granules; and on these being examined by a microscope, it was considered that distinct evidence of its vegetable nature was afforded. But the application of the same means of investigation has produced different results in other hands. In some red snow collected by Shuttleworth, above the line of perpetual congelation, he detected vast numbers of microscopic animals of exceeding minuteness and surprising agility. Several observers of the highest authority maintain that the supposed vegetable granules are in reality the ova of a rose-coloured rotiferous animalcule. It has been suggested by Martins, that in all probability the truth lies midway; and he conceives the colour to be due to the presence of innumerable vegetable cells enclosing fluid in which multitudes of infusoria find a nidus and support. The fact that the phenomenon, whatever its cause, reveals to us—namely, the existence of minute life in the highest regions of the air, and under circumstances where we should naturally suppose life and organization alike impossible—is of the highest interest.

Occasionally the indications of minute animal life in the air have assumed a more alarming character. The student of history must be familiar with the fact, that every now and then down the annals of time chroniclers have noted the appearance of blood-spots, or *signacula*, as they have been super-

stitiously called. One of the most graphic accounts of a phenomenon of this kind is contained in Dr Merle D'Aubigné's recently-published work on the Reformation. 'A widow chancing to be alone before her house in the village of Castelen Schloss, suddenly beheld a frightful spectacle—blood springing from the earth all around her! She rushed in alarm into the cottage—but oh horrible! blood is flowing everywhere—from the wainscot and from the stones! It falls in a stream from a basin on the shelf, and even the child's cradle overflows with it. The woman imagines that the invisible hand of an assassin has been at work, and rushes in distraction out of doors crying murder! murder! The villagers and the monks of a neighbouring convent assemble at the noise. They succeed in partly effacing the bloody stains; but a little later in the day, the other inhabitants of the house sitting down in terror to eat their evening meal under the projecting eaves, suddenly discover blood bubbling up in a pond, blood flowing from the loft, blood covering all the walls of the house! Blood, blood—everywhere blood! The bailiff of Schenkenberg and the pastor of Dalheim arrive, inquire into the matter, and immediately report it to the lords of Berne and to Zuingle!' It is very evident that there is much in this account which is overdrawn. It is plain, for example, that the bubbling up of blood in the pond, and its flowing over the basin and cradle, were figures of speech. Such never actually took place. A blood-like appearance was seen on and within the basin, and in the pond, and on the ground: but that was all. Evidently considerable alarm was excited; and fear, with dilated vision, saw more than nature presented. The cause of these blood-like spots has been generally considered to be found in the abundant and excessive development, under peculiarly favourable circumstances, of a little monad (*Monas prodigiosa*). It is always an unsatisfactory course to set down as false certain wonderful phenomena reported by history; and the microscope, among other instruments of science, comes acceptably to our aid. It admits the phenomenon, and explains the circumstances under which it is naturally conceivable it might have taken place.

Relinquishing the further consideration of these mysterious microscopic animal and vegetable worlds, it becomes us to inquire for what end they appear to have been created. For what wise purpose has He who makes naught in vain peopled the waters, the earth, and the air with hosts innumerable of invisible animals and plants? It is to be confessed we are really ignorant. The conception, that they have relation to the minute organic particles of matter which abound in these kingdoms of nature—that they feed upon, and thus remove these effete atoms, preparing them for again entering into the round of animal or vegetable vitalities—deserves consideration, and may be accepted for want of a better and more perfect understanding of the true and proper functions of microscopic life. Professor Owen well expresses this idea in his lectures on the invertebrata. 'Consider,' he observes with reference to the infusorial animalcules, 'their incredible numbers, their universal distribution, their insatiable voracity, and that it is the particles of decaying vegetable and animal bodies which they are appointed to devour and assimilate. Surely we must in some degree be indebted to these ever-active, invisible scavengers for the salubrity of our atmosphere. Nor is this all: they perform a still more important office in preventing the gradual diminution of the

present amount of organized matter upon the earth; for when this matter is dissolved, or suspended in water, in that state of comminution and decay which immediately precedes its final decomposition into the elementary gases, and its consequent return from the organic to the inorganic world, these wakeful members of nature's invisible police are everywhere ready to arrest the fugitive organized particles, and turn them back into the ascending stream of animal life. Having converted the dead and decomposing particles into their own living tissues, they themselves become the food of the larger infusoria, and of numerous other animals; and thus a pabulum, fit for the nourishment of the highest organized beings, is brought back by a short route from the extremity of the realms of organized matter. These invisible animalcules may be compared in the great organic world to the minute capillaries in the microcosm of the animal body, receiving organic matter in its state of minutest subdivision, and when in full career to escape from the organic system, and turning it back by a new route towards the central and highest point of that system.' Dr Young wrote, 'How populous, how vital is the grave!' The microscope tells us how populous and vital is the entire earth—how life rises into the lofty regions of the air, and descends into the bowels of the earth, and into those profound abysses of the ocean where no eye but that of Him who formed these wonderful organisms can behold them in their fulfilment of the functions of their existence.

Before drawing our sketch of the microscope and its marvels to a close, it may furnish a practical illustration of the value of this instrument for the purposes of science, and indeed for those of commerce, if we supply a few notes relative to its application in these ways. A remarkable evidence of its applicability to the purposes of geological research, and an interesting illustration of the connectedness of narrative which an acute naturalist can form out of the most slender materials, is supplied to us in the celebrated discovery by Professor Owen of the phyllophagous or leaf-eating giants of the South American forests, who could uproot and haul down the loftiest members of a tropical forest, and at their ease strip them of their foliage—from the fragment of a tooth! An interesting and popularly intelligible account of this remarkable discovery, and of the method of its accomplishment, has been given by Dr Carpenter, the substance of which well admits of re-production in these pages. It is necessary to state that the manner in which the microscope led to this discovery was as follows:—When a human tooth is cut perpendicularly downwards, and examined, the following structures are disclosed: the great mass of the tooth consists of a hard, bony substance resembling ivory, and called dentin. External to this is a layer of much harder material, forming what is termed the enamel. The dentin is characterised, on microscopic examination, by the passing of a series of tubes through its structure. Now, the arrangement of the structure of the teeth of different animals is by no means the same; and this difference in the arrangement of its structure constitutes, therefore, an important means of discovering to what group of animals any particular tooth may happen to belong. Seeing that such arrangement is always constant for the same group, we become enabled, on using the microscope, to determine with some precision to which group the animal from which the

specimen of dentin was taken originally belonged. Thus a fragment of a tooth, examined by this beautiful apparatus, conveys to us the most satisfactory knowledge as to the character of its possessor, even though we should be in possession of no other part of its body than a fragment of its tooth, which might not exceed the twelfth of an inch in size! The teeth of the megatheria—that great extinct race of sloths, transcending in size the modern sloths as much as an elephant a pig—have their peculiar type. The tooth is continually growing from a pulp at the base, so as to repair the waste of material caused by its constant employment. Its structure, on examination with the microscope, was discovered to be precisely analogous to that of the sloths of the present day. The tooth was not calculated to grind down very hard substances, and the present race of sloths are well known to live upon the soft shoots and leaves of trees.

Let us now trace this ingenious process of scientific induction, and see what had been established. The fossil tooth, on examination by the microscope, proved that its possessor belonged to the family of sloths. But its enormous size, in comparison with the teeth of recent sloths, also proved that the creature must have been vastly superior to the present sloths in size and strength. The tooth was a vegetable-crushing sort of tooth, not hard enough to grind down roots, but very suitable to crush leaves and sappy shoots; consequently, as modern sloths live upon such a pabulum, so must also this ancient monster despite his immense size. But now arose a new difficulty. How was this enormous brute to climb trees in order to get at their tender shoots and leaves? What tree could support so great a weight? Reasoning upon these facts, and upon the habits of the animal, Professor Owen was led to work out a most curious train of investigation, which led to the most complete history of the habits of any fossil animal differing so widely from the animals of the present time that had been ever given to the world, from the material supplied to the anatomist. By its enormous digging-for feet (for there was no question that they were organized for digging) it burrowed down and excavated beneath the roots of trees, and then rearing itself up upon its hind-legs and tail, as upon a tripod, it pushed against the tree, swaying backwards and forwards until the tree fell; then it browsed upon the leaves and young shoots, until it had completely stripped them.

The most curious part of the tale has yet to be told. Professor Owen was explaining to Dr Buckland, who advocated the theory that the megatherium fed upon roots, his views upon the subject, when the latter remarked that if the new account of its habits were correct, then very probably the animals would be killed by the fall of the trees. Professor Owen replied that their gigantic strength might possibly push the tree down in a direction from them, and that they would have sufficient instinct to get out of the way. Singularly enough, the very next specimen that was brought home from South America, and now deposited in the museum of the Royal College of Surgeons, showed a *very large fracture in the skull of the animal*—a fracture of such a kind as to prove that it had taken place during the life of the animal, and had reunited again. The fracture was one the animal must have received from such an accident as a tree falling upon its head: but being provided with a very thick skull, of which the brain only formed a small portion, it escaped vital injury, perhaps lay

insensible for a time, but afterwards led a long and active life, and probably died from some very different cause.

The wide range of palæontological and geological science to which the microscope may be made to render service, cannot be better indicated than in the words of that philosopher who experienced this remarkable success in its employment. 'When,' he observes, 'we submit to the microscope the structure of a piece of drift wood, buried from ancient times in the eocene-clay deposits of the great estuary of the diminished but still noble river (the Thames) that flows past our metropolis—when conditions of the vegetable structure are detected in the fossil, to which the nearest approach is made in the ligneous tissue of that family of plants from which the pepper of commerce is obtained—do we not derive from such a comparison a conviction that these primeval *Piperaceæ* must have co-existed with the vultures, turtles, crocodiles, and boa-constrictors of Sheppey, under atmospherical conditions more nearly approaching to those of a tropical climate than any dependent on the mere equalisation of temperature, little if at all superior, in the average, to that which now prevails in the south of England? And if the microscope is thus essential to the full and true interpretation of the vegetable remains of a former period, it is not less indispensable to the investigation of the fossilised parts of animals. By the microscope the supposed monarch of the saurian tribes—the so-called *Basilosaurus*—has been deposed, and removed from the head of the reptilian to the bottom of the mammiferous class. The microscope has degraded the *Saurocephalus* from the class of reptiles to that of fishes.' In fact the hammer and the blowpipe are not so essential to the geologist as is the microscope; and there can be little question that advancing time will display still newer and more extraordinary evidences of the vast fund of information upon the sciences in question this apparatus is capable of opening up.

At the meeting of the Microscopical Society on April 26, 1848, a most curious paper was read by Mr J. Quekett, upon the application of the microscope to a very singular sort of antiquarian research. Early in the month of April 1847 Mr Quekett was asked by Sir Benjamin Brodie whether it were possible to determine if skin which had for many years been exposed to the air, were human or not? He replied in the affirmative if any hairs were present. It was then mentioned that Mr Albert Way was very desirous of ascertaining whether certain specimens of skin stated to have been taken from persons who had committed sacrilege, and which for centuries had been attached to the doors of churches, were unequivocally human. Subsequently, a communication from Mr Way, containing a specimen of skin, together with an account of the tradition which narrated the circumstances of its having been taken, was made to Mr Quekett. The tradition, which resembles many others of a similar kind, exists in Worcester, that a man having been caught in the act of committing robbery in the cathedral, was flayed, and his skin nailed upon the doors as a terror to the sacrilegious. The doors have been recently replaced by new ones, but they are still to be seen, and a portion of the skin which was found under the iron hinges and clamps of the door was submitted to microscopical examination. With a power of a hundred diameters, it was found that the skin was really human, as it had two hairs on its surface, and very probably the unfortunate wretch from whom it had been taken had light hair! A piece of skin,

traditionally given to a Danish pirate, existed for nine hundred years on a door of a church in Essex. In 1848 the microscope revealed the fact, that it was in all probability taken from the back of the Dane, and that he too was probably a light-haired individual. A more singular application of this instrument than that in question can scarcely be imagined. Besides showing its great scientific value in bringing to light otherwise hidden truths, these specimens establish the wonderful power of skin and hair to withstand for centuries atmospheric influences, and serve to point out that, next to the bones, they are the most durable parts of the human frame.

It might be thought that the science of chemistry was in itself complete, and needed no extraneous assistance; that the tests with which it has furnished itself are sufficient for all the purposes of scientific inquiry. And there can be little doubt that such is the case by any who have made themselves familiar with the progress of this splendid system of knowledge of late years. Yet while this is admitted, the microscope promises to furnish the chemical philosopher with a test-apparatus not inferior in the instances in which it is applicable to any with which he is acquainted. We can state from experience, that the corroborative testimony furnished by this instrument in chemical investigation is of the highest value. Let us take a simple instance. Some years since a continental professor of medical jurisprudence discovered the remarkable fact, that by certain manipulation small strips of copper ribbon might be made to supply a most delicate test for the presence of the acrid and virulent poison arsenious acid—in common language, arsenic. The chemist whose aid was called in in a case of suspected poisoning, had simply to take some of the poisoned food or contents of the alimentary canal, apply his strips of copper ribbon, afterwards collect the latter and dry them, and he would be able in the course of a few minutes to ascertain the guilt or innocence of the suspected party, and in the following singular but simple way:—the strips of copper were put into a clean glass-tube, the flame of a spirit-lamp was applied to the bottom of the tube, and in a few minutes the arsenic, if any were present, crystallised in a brilliant zone around the upper end of the tube. Now, arsenious acid forms very beautiful crystals of an octohedral figure. The application of a microscope to this zone finished the proof—the octohedral figure became splendidly conspicuous—the evidence was complete. We have repeated these experiments many times, and the evidence thus afforded by the microscope has always appeared to us one of the most satisfactory of any in the whole range of chemical investigation.

Dr John Davy, in a paper written in 1846, and published in the 'Edinburgh New Philosophical Journal' and other periodicals, says that in his belief the time is not far distant when the philosophical chemist will require the microscope as much as, and even more frequently than, the balance, and that the one will be considered as essential to a laboratory of research as the other; and to the inquiring traveller, limited as to apparatus, more useful than any other single implement that can be mentioned hitherto attainable. Particularly in affording preliminary information as to the nature of the subject under investigation, this instrument will prove of the highest value. An instance of its application in this way is given by the same author. It is a disputed point whether those peculiar, and in many respects singular birds, the humming-birds, feed on insects or the sweet juice of flowers—

some naturalists maintaining that they live exclusively on the one, others that they live exclusively on the other. By repeated observation—first microscopical, afterwards chemical—made on the contents of their minute stomachs, Dr Davy ascertained that insects are their solid food, and that the sweet juice of the nectary of the flowers is the ordinary drink of these birds. The tongue of the humming-bird, projectile and bifid, is peculiarly fitted for taking insects; and when moist with a honied viscid lure its power is even increased. In every stomach of this bird that Dr Davy examined, he detected with the microscope parts of insects, and sometimes entire and living ones.

It appears that M. Orfila, the renowned toxicologist, was one of the first to apply the microscope to the elucidation of questions connected with medical jurisprudence. A very curious evidence of its importance in those investigations in which the science of medicine has to be united with the study of the law occurred in France in 1837. A murder had been committed under peculiar circumstances, and the corpse was found covered with blood, and wounded in several places. The murderer was wholly unknown. Suspicion at length fell upon an individual, whose house was immediately searched for evidences of the deed. But nothing was found calculated to implicate this person beyond a hatchet, on which were some stains and a few hairs. It was thought that a clue was now obtained to the discovery of the murderer, and the hatchet was submitted to microscopical investigation. M. Ollivier undertook the task, and in a short time he confidently declared, that so far as this evidence against the individual went, it was futile. The hairs proved, on examination, to belong to an animal, and not to man. The events of the trial fully confirmed this, and the evidence fell to the ground. At another period, it may be easily imagined how poor would have been the suspected person's chance of escape, against whom circumstantial evidence of such a nature could be brought! To the microscope, it is scarcely too much to say, this person was indebted not only for the declaration of his innocence, but for the preservation of his life. From a difference which physiologists well know to exist between the blood globules of animals and those of man, it would be possible by the assistance of the microscope to ascertain whether the blood on a dagger were human or animal, and thus to establish the fact whether or not it had been innocently or guiltily employed.

Some years ago it was publicly announced in Paris, that the milk-dealers in that city were adopting a wholesale system of adulterating milk, and one on an entirely new principle. It was stated that these ingenious artists—for so they must be called—first removed the cream of the milk, and then, in order to restore the richness of the fluid, added a certain quantity of the brain of the calf or sheep. This was afterwards denied by the paper that at first announced it, but failed to quiet a great portion of the population of Paris, who were thrown into great excitement about it, as the use of milk is almost universal among all classes. It became, therefore, of extreme importance to discover whether this adulteration actually took place. M. de Chaubry, in a memoir read before the Royal Academy of Medicine, asserted that by means of the microscope this adulteration, when present, could be certainly detected. When the brainy matter of the sheep or calf is added either directly to the milk, or in emulsion with water

in the proportion of 5 per cent., the physical properties of the milk—its odour, savour, colour, and density are not so notably altered as to allow the adulteration to be at once perceived. But on microscopic examination the foreign matter was immediately detected. On employing a power of from 300 to 500 diameters, fragments of tubes known to form part of the cerebral substance were seen by the side of the ordinary milk globules. MM. Soubeiran and Henry confirmed these results; and it is to be hoped that the inhabitants of Paris reaped the benefit of the microscopical discovery. It may be interesting to a portion of our readers, to be informed that the instrument has been applied to milk for other purposes. M. Duvergie has written an interesting paper in the 'Bulletin de l'Academie Royale de Médicine de Paris' on the microscopical examination of milk—with a view to the selection of nurses. His report has shown that there is great variety in the nutritient properties of the milk of different nurses, and points to an easy and simple method of ascertaining which is the best. The microscope has thus been called in as a mother's aid for her infant, and it has been determined by its means which of a number of candidates for the office of nurse should be selected. This is a discovery of great and practical importance, and one of which English medical men would do well to avail themselves in special cases.

The merchant is beginning also to appreciate the wonderful powers of discrimination furnished to him by this instrument. There can be no question that a most extensive system of adulteration is in practice in foreign countries, exporting their products for consumption in our own. Our tea is adulterated; our sugar is likewise largely adulterated; and as to drugs, it is a matter of extreme difficulty to procure really pure, unsophisticated articles. It may be important also to the agriculturist, to inform him that the new manure, guano, is almost constantly adulterated; and that of this fact, as to many of the others, the microscope may be made instrumental in the detection. Mr E. J. Quekett has recently shown that it is perfectly possible to distinguish the Ichaboe guano from the Peruvian, while adulterations may with facility be almost immediately detected in it. The microscope has also been successfully employed in determining the composition of various fabrics. Thus armed, the purchaser can determine whether what he buys for linen-cloth is really made of flaxen fibre, or of a mixture of cotton and flax. In short, we are only at the commencement of a series of applications of this valuable instrument, which will in a short time become necessary to many who at present disregard its assistance. Medical men have long perceived its value; and it may truly be said, that to members of this profession we are indebted for many of our most valuable microscopic researches. 'In conclusion,' observes Dr Davy in the paper before quoted, 'this, it appears to me, may justly be said in commendation of the microscope in all its applications, that its tendency is equally to facilitate and increase the accuracy of observation, and hence to remove vagueness and give precision of views, and at the same time to add wonderfully to the interest of inquiry and to extend its sphere—in this respect having an influence in relation to subjects for chemical (and it may be added, for scientific) research resembling that of the most powerful telescopes in relation to the objects of astronomical research, both conducing, the one hardly less than the other, by the phe-

nomena they display, to excite in the mind of the philosophical inquirer feelings of admiration and of awe, and not less of humility.'

No person can lay down the sketch we have here attempted to portray of the extent, importance, and variety of minute existence surrounding us, without feeling that the microscope has brought man into relation with a new world of organization—a world quick with vital energy, inconceivably abundant, and incessantly active. Galileo, Newton, and Herschel have introduced man to the knowledge of a world of worlds infinitely great, glorious, and all-extending. But the instrument in question lays open to us a yet more wonderful field of study, and informs us of the existence of millions of minute beings, of which the unheeding multitude are as entirely ignorant as though they had never been created. The emotions which researches such as these excite in the mind are at once deep and humbling. 'When,' says Humboldt, 'the active spirit of man is directed to the investigation of nature, or when, in imagination, he scans the vast fields of organic creation, among the varied emotions excited in his mind there is none more profound or vivid than that awakened by the universal profusion of life.' And truly it is to the microscope that we are indebted for the results which such investigation has supplied. The life it reveals is unbounded—in the air, in the earth, and in the waters; alike under the genial influences of a tropical sun and the chilling frosts of a polar winter; in the living tissues of plants and animals, as well as on their decaying remains; and not unfrequently operating with such activity, and in such myriadfold force, that creatures in themselves insignificant elaborate results which rank among the grandest phenomena of nature.

PRE-COLUMBIAN DISCOVERY OF AMERICA.

UPWARDS of two hundred years the glorious epithet of World-Discoverer had been attached to the name of Christopher Columbus, before it was known that the eye of any inhabitant of the old world had prior to his gazed upon any part of the wide regions which his genius laid open to its enterprise.* It was at the commencement of the eighteenth century that Thorfæus, a learned Norwegian antiquary, while searching those inestimable treasuries of ancient lore, the Icelandic Sagas, in quest of materials for the history of Greenland, came upon proofs not only of the early colonisation of this northernmost point of the habitable globe by the Scandinavians, but also of the discovery of the American continent by these adventurous colonists in the tenth century. Thorfæus made the interesting fact known in a Latin treatise, which did not fail to awaken the attention of Scandinavian antiquaries and historians, several of whom have treated of the subject in the scientific journals of their respective countries, or in larger historical works; but only very few copies of Thorfæus's essay (which has now become a literary rarity even in the north) ever passed the limits of Scandinavia; and as the literature of that region has hitherto in a great measure been a dead letter to the rest of the world, the pre-Columbian discovery of America by the Northmen remained, until a very recent date, an unknown fact to the general public of Europe and America. Twelve years ago, Professor Raffn, a distinguished Danish antiquary, desiring to make the subject more generally known, and being aided by the Royal Society of Northern Antiquaries, published a volume embracing every portion of ancient Icelandic literature bearing upon the discovery, together with Danish and Latin translations, with *fac-similes* of several of the manuscript Sagas, and with charts and maps, and delineations of American antiquities believed to be connected with the presence of the Northmen in the countries where they were found. The character and costliness of this volume were, however, such as to prevent its having a wide circulation; and though two British authors have since its publication

* The discovery of unknown countries to the south and west of Greenland and Iceland by the ancient Scandinavians, is indeed mentioned by Adam of Bremen and Orderic Vital, who both wrote in the eleventh century; and claims of the same kind have also been advanced by the Italians of the middle ages; but such isolated facts mentioned by old chroniclers carry very little weight with them when not substantiated by concurrent evidences.

drawn attention to the matter in a more popular form,* we believe that to the generality of our countrymen the claims of the Northmen to share in the glory of Columbus are as yet unknown. However disconnected the two discoveries may seem, there is still some probability that the first may not have been entirely without influence on the second. In 1477, Columbus, anxious to obtain every information which could facilitate the realisation of the great undertaking that had become the object of his life, visited Iceland on board a Bristol trading vessel; and as the Sagas of that country were not shut up in libraries, and known only to a few learned men, but their perusal formed then, as it does now, the favourite pastime of the people, it is more than probable that the fact of the discovery, by men of their race, of unknown lands to the south-west of Greenland and Iceland, was communicated to him. Who can tell whether his faith in the conclusions of his own abstract reasoning could have withstood the threats and fears of his impatient and mutinous crew, had it not been strengthened by the evidence contained in the records of the Northmen?

In the beginning of the tenth century, when Harold the Fairhaired (Haarfager) was subjecting to himself the different petty sovereignties into which Norway had until then been divided, and was making great changes in the tenure of land and other time-honoured customs, many of the proud Bönder† of that country, disgusted with the new state of things introduced by the usurper, left their homes, and sought an asylum—some in the mountainous and desert regions of Helsingeland and Jemteland, others in the Færö islands, others again in the Orkneys and Hebrides, and some in the 'great island in the Arctic Ocean, many miles north of Trondhiem,' which had been discovered by chance a few years before by some adventurous mariner of their race, and had obtained the name first of Gardarsholm, subsequently of Snowland, and ultimately of Iceland. In this island, so appropriately named, under whose eternal snows glow the fires of innumerable volcanoes, where springs of boiling water gush forth from the frozen earth, where barren lava-tracts stretch on for several miles until they merge in verdant valleys, which afford herbage for large flocks of sheep and cattle—in this land of contrasts, so rich in natural phenomena of the most sublime and imposing character—the Norwegian colonists, who were subsequently joined by other emigrants from the three Scandinavian countries, established communities governed according to the laws and customs the violation of which had driven them away from their native land. These communities, which ultimately merged into one great commonwealth, have proved of the utmost importance for the history of Norway, Sweden, and Denmark; for here the language and religion, the manners, customs, and individual characteristics of the ancient Scandinavians maintained themselves in their purity for many centuries, and it is therefore in the historical compositions of the Icelanders that we must seek for almost all that refers to these subjects. Cut off by their isolated position from active participation in the political life of other nations, and forced by the natural features of their island to devote them-

* Beamish: Discovery of America by the Northmen in the Tenth Century; with Notices of the Early Settlements of the Irish in the Western Hemisphere. Boon, 1841.—Laing: Chronicles of the Kings of Norway. Longmans and Co, 1844.

† Possessors of freehold property.

selves in a great measure to the peaceful vocations of pastoral life, the love of Scaldic lore, always a leading characteristic of their race, was still more decidedly developed among the Northmen of Iceland; and the pleasure of listening to the poetical traditions of the exploits of their forefathers, in some degree compensated them for the less active life to which they were condemned. As time passed on, the more recent events in the mother countries became of secondary importance to them; but the past history of those countries was also theirs, and among them were the descendants of men whose glorious exploits formed the theme of many a Scandinavian Scald. These descendants, proud of their ancestry, were particularly anxious to keep up the remembrance of the past, and to transmit it unimpaired to their posterity; and thus every family of note in Iceland came to have its own history, or Saga, growing in extent as generation succeeded generation. Within the republic itself, the old passions of the Northmen were not at rest: the same love of adventure, the same impatience of opposition, the same impetuosity, the same thirst for revenge, which characterised them in their original countries, followed them to their more northern abode; and the Viking expeditions, the party feuds, the family broils and bloody deeds of vengeance, which so frequently formed the theme of the Scandinavian Scalds, were not wanting in Iceland, and furnished abundant materials to the Saga-teller, whose prosaic narratives in a great measure superseded the rhythmical compositions of the Scalds. The lively interest in everything that concerned the community to which they belonged, made them listen as eagerly to narratives of passing events as to the mythic feats of the past; and there were therefore always persons ready to collect information relative to affairs of public importance, or to the leading personages of the country, whose histories thus became part of the traditionary lore of the people. The warm welcome which a good Saga-teller was sure to receive wherever he presented himself, caused the art of narrating to attain a high degree of development among the Icelanders; and the men who distinguished themselves in this profession were as highly honoured as the performers of the most heroic deeds. The love of the people for information grew with the food it fed upon. When strangers arrived in the island, or natives returned from abroad, the inhabitants flocked around them, to hear accounts of their personal adventures, or of the progress of events in other countries; and no severer reproach could be addressed to a traveller, than that 'no one was the wiser for his adventures.' How great was the love of the Icelanders in those days for information of this kind we learn from an amusing incident related in one of the Sagas. A bishop of the island returned in the year 1135 from a voyage to Germany and Norway on the day the people were assembled on the Thing; a great quarrel had arisen because different opinions prevailed, and the one party would not yield to the other. When the quarrel was at its height, tidings were brought of the arrival of the bishop. This at once put an end to the angry discussion.* The assembly forthwith dispersed, and hastened

* It is curious to observe how alike human nature is in all ages and all climes. A Demosthenes of Iceland might on this occasion have addressed the same reproaches to his countrymen which the Demosthenes of Athens thundered in the ears of the Athenians.

to meet the prelate, who was obliged to ascend the eminence on which the church was built, and give a full account of what had taken place in Norway during his stay there.

A Saga narrated by a trustworthy and respected man passed from mouth to mouth; and if the same series of events formed the theme of different narratives, that one was in particular committed to memory whose first narrator bore the best character, or the style of which was best suited to impress it on the memory. The several narratives were collected, and their trustworthiness weighed, and they were either extended or corrected in accordance with the testimony of respected contemporaries, or others likely to be well informed. Thus the verbal traditions of the country came in course of time to form connected and uniform historical narratives, which were committed to writing in the beginning of the twelfth century—about one hundred years after the establishment of the Christian religion in Iceland, and two hundred and forty years after the first colonisation of the island, and when the Icelanders had become familiar with the art of writing in the Latin character. Thenceforward the history of the country was no longer intrusted to the memory only of its inhabitants, but was faithfully recorded in written annals.

Such is the origin of the Sagas and songs on which so great a part of ancient Scandinavian history is founded; and also of those which contain the history of the discovery of America by the Northmen, and with which we are here more particularly concerned.

The principal information relative to the voyages of the Northmen to Wineland—as they denominated the country supposed to have been America—is derived from two sources: the one being an account of discoveries made by Eric Rauda, or Red, episodically introduced into the version of King Olaf Tryggveson's Saga, contained in a collection of manuscript Sagas found in the year 1650 in the island of Flatö, in Breidafiord in Iceland, and thence called the 'Flatö Annals;' the other being a Saga called Karlsefne's Saga, after the personage whose history is the theme of the narrative, and which also forms part of the 'Flatö Annals.' The accounts of the adventures of Eric Red and his sons and daughter, as given in these annals, though evidently extracted from a more extensive history, and interpolated in a disjointed form in another Saga, nevertheless form a consecutive narrative, to which Professor Rafn has given the name of Eric Red's Saga, which we will adopt when alluding to it.

Eric Red was the son of a Norwegian who had fled from Norway on account of lawless deeds committed there, and had settled in Iceland. Eric followed his father's example, and was outlawed in Iceland, as his father had been in Norway. Being obliged to leave the land of his adoption, he proceeded to seek for a country which, tradition said, had been seen by a man named Gunbiörn, once 'when he was driven westward out into the ocean.' Eric discovered the land, and gave it the name of Greenland; 'for,' said he, 'if the country has a good name, people will be drawn to it.' In the year 986 he founded a settlement in the newly-discovered land, and was followed thither by several of his countrymen. Among the latter was a man named Herjulf Bardson. Biarne, the son of Herjulf, returning to Iceland from a trading voyage to Norway, and hearing of his

father's removal to Greenland, determined to visit him there; though, as he said to his companions and crew, 'senseless our voyage will be deemed, as none of us have ever been in the Greenland Sea.' 'But nevertheless,' continues the Saga, 'they put out to sea as soon as they were ready, and sailed during three days, until the land was lost sight of under the water; but then the favourable wind fell, and there arose north winds and fogs, and they knew not whither they were sailing; and thus it went on for many days. After that they again saw the sun, and could now descry the points of the heavens. They now hoisted sail, and sailed this whole day before they saw land; and they then spoke together about what land this could be, and Biarne said he thought that it could not be Greenland. They asked him if he would sail in to this land or not. "It is my advice," he said, "to sail in close to the land;" and they did so, and soon saw that the country was without mountains, and was covered with woods and small hills. They left the land on their larboard side, and had their sheet on the land side. Afterwards they sailed one day and a night before they saw land again. They asked if Biarne thought this was Greenland, but he said that he thought as little that this was Greenland as the former, "for in Greenland they say there are large mountains of ice." They soon drew near to this land, and saw that it was a flat country overgrown with wood. Then the wind fell, and the crew talked about its being advisable to land here; but Biarne would not consent. They pretended that they were in want of both fuel and water. "Of neither of these do ye stand in need," said Biarne; but his men blamed him somewhat for this. He bade them hoist sail, and they did so; and they turned the ship's bow from land, and sailed out into the open sea with a south-west wind for two nights and a day; they then saw the third land, and this was high, and covered with mountains and icebergs. They then asked of Biarne if he would land here, but he said that he would not, "for this land did not seem to him inviting." They did not, therefore, take in their sails, but kept along the land, and saw that it was an island. They again turned the stern of their vessel towards this land, and sailed out into the open sea with the same wind; but the wind increased, and Biarne bade them take in a sail, and not sail faster than the ship and the tackle could bear. They now sailed two days and two nights, and then saw the fourth land. They then asked Biarne if he thought this was Greenland or not. Biarne answered, "This looks most like Greenland, according to what has been told me of that country, and here we will take the land." They did so, and landed in the evening on a promontory where there was a boat. Here on this promontory dwelt Biarne's father, Herjulf; and after him the promontory was named, and has since been called Herjulfsness (Herjulf's Promontory).'

When Biarne's countrymen in Greenland heard of the countries he had thus accidentally discovered, they upbraided him for not having explored them; and Eric Red's son, Leif, determined to undertake an expedition for the express purpose of so doing. Having purchased Biarne's ship, and enlisted a crew of thirty-five men, Leif accordingly set sail; and, says the Saga, 'They came first to the land which Biarne had discovered last. They sailed in to land and cast anchor, put out their boat, and went on shore, and saw there no grass. Large mountains there were everywhere in the interior, but between the sea and the mountains the land was like one

great stony plain, and the country seemed to them to possess no attractions. Leif then said, "Now it has not been with us with regard to this country as it was with Biarne, that we have not set foot on shore; now I will give the country a name, and call it Helluland (Stone Land)." After this they went on board; sailed out into the sea again, and discovered another country. Again they sailed in to land, and cast anchor, then put out the boat, and went on shore. This country was flat and covered with wood, and wherever they went there were large tracts of white sand, and the coast was low. Then said Leif, "This land shall be named according to its nature, and it shall be called Markland (Wood Land)." After this they hastened down to the ship again. Now they sailed thence in the open sea, with a north-west wind, and were out a day and a night before they again saw land; and they sailed towards it, and came to an island that lay to the north of the land. They went on shore there, and looked about them, in fair weather, and they perceived there was dew upon the grass, and it so happened that they touched the dew with their hands, and then put their fingers into their mouths, and they thought they had never tasted anything so sweet. Afterwards they returned to the ship, and sailed into the sound which was between the island and a promontory that stretched northwards from the land, and they sailed in, holding to the west, past the promontory. There was very shallow water in ebb-tide, and their ship therefore lay dry, and it was a great distance from the land to the sea. But their desire to get to the land was so great, that they gave not themselves time to wait until the water again rose under their ship, but ran directly on shore, at a place where a river flowed out of a lake; but as soon as the water rose under the ship, they took the boat, and rowed to the ship, and brought it up through the river into the lake, where they cast anchor, carried their hammocks up from the ship, and erected for themselves wooden booths. Afterwards they determined to make preparations to remain there during winter, and for this purpose they built large houses. There was no lack of salmon in the river and in the lake, and the salmon were larger than any they had before seen. The nature of the country was, they thought, so good, that the cattle would not require fodder during the winter, for there was no frost, and the grass was not much withered. Day and night were more equal than in Greenland and Iceland, for on the shortest day the sun was there above the horizon from half-past eight o'clock in the morning until half-past four o'clock in the afternoon. When they had finished their housebuilding, Leif said to his companions, "Now I will divide the men into two parties, and have the country explored, and the half of the people shall remain at home to take care of the house, and the other half shall explore the country; yet they must not go further than that they may return in the evening, and they must not separate." They did accordingly for some time, and Leif took his turn, so that one day he went with them, and the next he remained at home in the house. Leif was a tall and strongly-built man, of commanding and dignified appearance, and, with this, sensible and moderate in all things.

'It happened one evening that they missed a man of their company, and it was the German man Tyrker. This distressed Leif very much, for Tyrker had lived long with his father and himself, and had loved Leif

much in his childhood. Leif now soundly rated his people, and prepared to go out in search of him with twelve men. But when they had got a little way from the house, Tyrker came towards them, and was received with great joy. Leif directly perceived that his foster-father was not quite in his senses. Tyrker had a high forehead and quick glancing eyes, was freckled in the face, and low and weak of stature, but distinguished in all kinds of artifices. Then Leif said to him, "Why wert thou so tardy, foster-father, and why didst thou separate from the rest of the party?" He first spoke long in German, rolled his eyes to all sides, and made wry faces; but they understood not what he said. After some time he spoke in the Northern tongue, "I did not go very far, yet I have a new discovery to make known: I have found vines and grapes." "Can that be true, my foster-father?" said Leif. "Certainly it is true," said he, "for I was born in a country where there is no lack either of vines or of grapes." They slept that night, but on the morrow Leif said to his ship's crew, "Now we will undertake two things, so that the one day we gather grapes, and on the other we cut down grape-vines and fell trees, that we may have a cargo for our ship thereof;" and they accordingly determined to do thus. It is said that their long-boat was filled with grapes. They now felled timber to load their vessel with; and when spring drew nigh they prepared to sail away, and Leif named the country after its delightful produce, and called it Wineland (Vinland). They afterwards sailed out into the open sea, and had a favourable wind until they came within sight of Greenland and the cliffs below the icebergs.'

The fame and riches which Leif acquired by this expedition encouraged one of his younger brothers to follow his example; and Thorvald Ericson, having borrowed his brother's vessel, set out for Wineland in the year 1002, with the intention of still further exploring these regions. He and his crew arrived safely at Leif's booths, and there spent the winter.

'But in the spring Thorvald told them to prepare the vessel, and said that some men should sail in the long-boat along the western coast of the country, and explore it during the summer. They found the country beautiful to look at, and rich in woods; there was but a short distance between the woods and the sea, and tracts of white sand; there were many islands and shallow water. They found nowhere either human dwellings or the lairs of animals, except on one island which lay to the west, where they met with a wooden corn-shed, but they found no other works of man. They then turned back, and arrived at Leif's booths in the autumn. But the next summer Thorvald went with the ship eastwards, and along the land to the north. Then came upon them a heavy squall just as they were opposite a cape, and they were thrown upon land, and the keel was loosened from the vessel, and they remained long there, and repaired their vessel. Then said Thorvald to his companions, "Now we will raise up the keel here upon the ness, and call it Kialarness (Keelness);" and they did accordingly. Afterwards they sailed eastwards round the land into the mouths of the fiords (firths) that were nearest, and to a cape that stretched out into the sea, and was entirely overgrown with wood. Here they moored their vessel to the beach, threw a plank across to the shore, and Thorvald went up into the land with all his followers. He

then said, "This place is beautiful, and here I would wish to raise my dwelling." Afterwards they returned to the ship, and then saw on the sand, on the other side of the cape, three hillocks; and they went thither, and found three boats made of skin, and under each three men. They then divided their forces, and caught all the men with the exception of one, who escaped with his boat. The eight others they killed, and then returned to the cape, and explored it, and discovered some hillocks further up the fiord, and they supposed that these must be dwelling-houses.'

Subsequently the Northmen were attacked by the Esquimaux, called Skrælings in the Sagas, and to whom probably belonged the eight men whom they had put to death. Thorvald Ericson, fatally wounded in the encounter, was buried on the promontory which he so much admired, and to which was given the name of Krossaness (Promontory of the Cross), and his crew returned to Greenland with a rich cargo of vines and timber.

Eric Red's Saga next gives an account of an abortive attempt of a second brother of Leif to reach Wineland, and bring back the body of Thorvald; and then follows the narrative of a more fortunate expedition, undertaken by a man named Thorfin Karlsefne (that is, a man destined to achieve great things), who came to Greenland in his own ship, along with two other vessels, likewise commanded by their owners, who are also named. Having spent the winter with Leif Ericson at Brattelid, and espoused the widow of Leif's brother Thorstein, Karlsefne, being a man of an enterprising spirit, and feeling his ambition fired by the frequent mention of the Wineland expeditions of the Greenlanders, which formed a constant theme of conversation among the colonists, determined likewise to visit those countries.

'He enlisted for the crew of the vessel sixty men and five women. Karlsefne and his crew made this agreement—that they were to have an equal share in all that they obtained of the excellent products of the country. They had all kinds of cattle with them, for they intended to make a settlement in the land, if they found it possible. Karlsefne asked Leif for his houses in Wineland, but he answered that he would lend him, but not give him the houses. After this they sailed out into the open sea with the ship, and arrived safely at Leif's booths, and carried their hammocks up on land. They soon secured a great and good prize, for a whale had been thrown on shore, and it was both large and good: they drew nigh and cut up the whale, and thus they did not lack food. Their cattle went up into the land; but soon the males grew unruly, and were very ferocious. They had brought a bull with them. Karlsefne ordered them to fell trees, and to cut timber thereof for their ship's cargo, and had the timber spread out on a rock to dry. They availed themselves of all the excellent products of the country—of the grapes, as also of different kinds of fish which they caught, and of other good things. After the first winter came the summer; they then saw Skrælings, and a great troop of men issued from the woods. Their cattle was grazing close by, and the bull began to bellow very loudly; this frightened the Skrælings, and they ran away with their bundles, wherein were skins of gray foxes, sables, and different other kinds of skins; and they ran towards Karlsefne's house, and wanted to get into the house, but Karlsefne ordered the doors to be defended against them. Neither of the parties understood the language of the other. Then the

Skrælings put down their bundles, opened them, and offered their goods for sale; and wished, in preference, to have weapons in exchange for them; but Karlsefne forbade his men to sell their weapons; and he now bethought him of letting the women carry out milk food to them, and as soon as they saw this they would not buy anything else. The Skrælings thus traded in such manner that they carried away their purchases in their stomachs, but Karlsefne and his people got their bundles and their furs. Having thus settled matters, they went away. Now it is to be related that Karlsefne had a strong wooden fence erected round his house, and he got everything ready for defence. About this time Gudrid, Karlsefne's wife, gave birth to a male child, and to this boy was given the name of Snorri.' At the commencement of the following winter the Skrælings returned. A fierce battle ensued, in which many of the Esquimaux fell; but the Northmen, tired of their stay in a strange country, exposed to the constant attacks of the natives, returned to Greenland in the spring.

The next expedition to Wineland was undertaken five years later, in 1011, by Freydissa, a daughter of Eric Red, in company with two Iceland traders; but being solely intent on obtaining rich cargoes for their home voyage, this party undertook no further exploration of the country, and no new facts are learned from this part of the narrative. Relative to Karlsefne, however, Eric Red's Saga contains an anecdote which serves to shed some light upon the estimation in which the products of America were held at that period. From Greenland Karlsefne had proceeded to Norway:—

'But the following spring he put his ship in order to go to Iceland; and when he was quite ready, and his ship was lying outside the pier, waiting for favourable wind, there came to him a German man from Bremen, in Saxland: he asked Karlsefne to sell him his broom. "I will not sell it," said Karlsefne. "I will give you half a mark in gold for it," said the German man. Karlsefne thought this was a good offer, and thereupon they concluded the bargain. The German man went away with the broom. Karlsefne did not know what wood it was; but it was mæsur, which had come from Wineland.'

Such is the first of the narratives that acquaint us with the colonisation of Greenland in the tenth century, and the subsequent expeditions of the colonists of this northern land to other countries until then unknown. From the internal evidence of language and style, the profoundest Icelandic scholars have pronounced the written record to date from the twelfth century (though the copy in the 'Flatö Annals' is of later date); and for the same reasons Karlsefne's Saga, the second of the narratives to which we have alluded, is believed to have been committed to writing at about the same period, but by a different hand, and probably in a different locality. Though treating of the same events, and of the same personages, this Saga in many points differs from that of Eric Red; and the differences are not always such as would naturally arise from the greater or less importance attached to the chief personages, according as the one or the other is looked upon by the narrator as the hero of his tale, but, on the contrary, lead one to suppose that the original information relative to both cannot have been received from the same source. In both, the same implicit faith of the

narrator in the truth of the events recorded by him is apparent, and the same simple-hearted belief in his being equally trusted by others; and although supernatural occurrences are related in both, this ought not to militate, in our eyes, against their veracity, for a belief in supernatural agencies was then as much a matter of course as the reverse is the case in the present day.

Karlsefne's Saga, though in style and character as simple as that of Eric Red, shows greater art in design and composition. Although Thorfin Karlsefne and his voyage to Wineland are evidently intended to be the prominent subjects of interest, we are not at once introduced to the chief personage, but are first made acquainted with the subordinate actors, who have exercised an influence on the fate of the hero. Thus Eric Red's settlement in Greenland, and the subsequent discovery of Wineland by his son Leif, having led to Karlsefne's voyage to that country, the Saga opens with an account of Eric Red, his descent, his life in Iceland, and his subsequent removal to Greenland—in all which points there is perfect agreement with the narrative above quoted. Next we are introduced to Gudrid, Karlsefne's future wife, who seems, indeed, irrespectively of her connection with Eric Red and Karlsefne, to have been a person held in high esteem among her contemporaries. Gudrid, we are here told, was the daughter of a man by name Thorbiörn, of ancient and honourable descent; 'a good Bonde, and one who kept up great state,' but who, in consequence, having suffered much in his pecuniary circumstances, left Iceland, and settled in Greenland, in the neighbourhood of his friend Eric Rauda.

The next chapter of Karlsefne's Saga relates to Gudrid's marriage with Thorstein Ericson, to the introduction of Christianity in Greenland by Leif the Fortunate, and the discovery of Wineland by the same. With regard to each of these points there are, however, strange discrepancies between this and Eric Red's Saga. No mention is here made of Biarne's first accidental discovery of the unknown lands in the west; on the contrary, the chronicler represents Leif as having been the first who saw them, when returning from his voyage to Norway, where he had been converted to Christianity by King Olaf Tryggveson. On his arrival in Greenland, a voyage of discovery to the unknown lands seen by him is proposed by his brother Thorstein; and both the brothers, accompanied by their father Eric and twenty men, set sail in the ship which had brought Thorbiörn and Gudrid to Greenland; but after having been driven about on the sea for some time without obtaining sight of the looked-for shores, they are obliged to return without having accomplished their object. On their return Thorstein's and Gudrid's wedding takes place, and in the following winter Thorstein dies—the account of his death including the same supernatural apparitions as are recorded in Eric's Saga, except that relative to these, as to all other matters, Karlsefne's Saga enters more into details. It is not until we have learned Thorbiörn's death, and Gudrid's consequent removal to Eric's house (not Leif's, as in Eric Red's Saga), that we are introduced to the hero of the tale. The genealogy of the latter proves him to have been the descendant of an illustrious family resident in Iceland. Having devoted himself to the honourable and peaceful vocations of a trader, he had acquired for himself the reputation of a

skilful sailor and merchant, the merchants being in those days always the commanders of their own vessels.

'One summer Karlsefne prepared his ship with the intention of making a voyage to Greenland; Snorri Thorbrandson from Alptefiord went with him, and they were altogether forty men on board. There was a man by name Biarne Grimolfson from Bredefiord, and another, whose name was Thorhal Gamleson, a man from the Eastfiord, they also got ready their ship that summer with the intention of going to Greenland; they were also forty men on board. Karlsefne and the others sailed out in the ships as soon as they were ready. It is not related how long they were at sea; but it is told that both the ships arrived in Ericsfiord in the autumn. Eric and several of the inhabitants rode down to the vessels, and began to trade with them, and soon concluded bargains with them. The owners of the ships first bade Eric take as much of their goods as he liked; but Eric on his side showed them hospitality in return, and invited the crews of the two ships to come and spend the winter with him in Brattelid. The traders accepted, and thanked him. Next, their goods were carried up to Brattelid; there was no lack of large out-buildings to stow them in, nor was there much want of anything that was necessary, and therefore they were well contented during the winter. But towards Yule Eric began to be silent, and was not so cheerful as was his wont. Therefore Karlsefne once spoke to Eric, and said, "Hast thou any cares, Eric? People think they remark that thou art not so cheerful as is thy wont: thou hast entertained us with the greatest generosity, and it is our duty to requite thee with such services as we have it in our power to perform; say now what is it that grieves thee?" Eric answered, "You receive graciously, and in a friendly manner what is offered you here; therefore I do not fear that as regards what passes between us there will be any difficulties; but on the other hand, I fear that when you go to other places, it will be said that never did you spend a worse Yule than the one which is now approaching, when Eric Red entertained you in Brattelid, in Greenland."

"It shall not be so, Bonde," said Karlsefne. "We have in our ship both malt and corn; take of them as much as you like, and prepare with them a feast as costly as you deem proper."

'This offer was accepted by Eric, and he then made preparations for the Yule entertainment. And the entertainment was so magnificent, that people thought that never had the like been seen in a poor country. And after Yule Karlsefne opened to Eric that he wished to marry Gudrid, for it seemed to him that he was the one to decide in the matter. Eric answered favourably, and said that she must fulfil her destiny, and that he had heard naught but good of him; and it ended so that Thorfin was betrothed to Gudrid, and the entertainment was made still more brilliant, and their wedding was celebrated; and all this happened in Brattelid, during the winter.'

Frequent mention being made of the unknown countries seen by Leif on his voyage from Norway, Thorfin Karlsefne and Snorri determine in spring to undertake a voyage thither.

'With them went Biarne and Thorhal, the men mentioned before, with their ship. A man by name Thorvard, who was married to Freydis, a natural daughter of Eric Red, also went with them, and Eric's son Thor-

vald, and Thorhal, surnamed the Huntsman, who had been long with Eric, and served him as huntsman in summer, and as house-steward in winter. He was tall and strong, black, and like a Jætte*; taciturn and foul-mouthed when he did speak, and always spurred on Eric to evil. He was a bad Christian; he was well acquainted with all the desert places; he was on board the ship with Thorvard and Thorvald. They had the ship that Thorbiörn had brought thither. They were in all 160 men when they sailed to the Westerbygd, and thence to Biarney. Thence they sailed a day and a night southwards, when they saw land, and put out a boat, and explored the country. They found there large Hellur (flat stones), many of which were twelve ells broad; there were a great many foxes there. They gave the country a name, and called it Helluland. Thence they sailed a day and a night, and turned from south to south-east, and found a country covered with wood, and many animals in it. Outside the land, in south-east, lay an island: on this island they killed a bear, and afterwards called it Biarney (Bear Island); but the land they called Markland. Thereafter they sailed for a long while in a southerly direction along the coast, and came to a promontory. The land was on the starboard side of the ship; there were long and sandy coastlands. They rowed to land, and found on the promontory the keel of a ship, and called it thence Kialarness (The Promontory of the Keel), and the coastlands they called Furdurstrandi (the Long and Wonderful Beaches), for it took long to sail past them. Then the country appeared intersected by creeks: they steered the ship into a creek. King Olaf Tryggveson had given Leif two Scottish people—a man whose name was Hake, and a woman called Hekia: they were swifter than animals. These people were on board the ship with Karlsefne; but when they had sailed past Furdurstrandi, they put the Scottish people on shore, and bade them run southwards into the interior of the country, and examine its character, and return before the lapse of two days and a night. These people were clad in a kind of habiliment called Kiafat, which was made in such a manner that the upper part formed a hat; it was open on the sides, and had no sleeves, and buttoned together between the legs with a button and a strap; but otherwise the limbs were bare. They remained there the appointed time; but when they returned, the one had in his hand a bunch of grapes, the other an ear of wheat recently sown. They went on board the ship, and they then sailed further. They sailed into a frith, on the outside was an island round which went strong currents; for this reason they called it Straumey (Island of the Currents). There were so many eider ducks on the island that they could hardly walk without treading on them. They called this place Straumfiord (The Frith of the Currents). They unloaded their ships here, and prepared to remain; they had various kinds of cattle with them. The country was very beautiful: they did nothing but explore the country.'

The winter is spent in this locality; but the enterprising Northmen had neglected to lay in a sufficient stock of provisions, and towards summer, when fish begins to be scarce, this neglect is grievously felt. Thorhal the Huntsman also caused them much distress by his blasphemous words

* Gigantic beings, represented in the myths as the enemies of the gods, and as endowed with superhuman strength.

and extraordinary conduct; and such was the simplicity and the faith of these untutored children of the north, that when a whale was at length caught, and they were on the point of eating of its flesh, the religious feeling proves itself stronger even than their hunger, when they learn that Thorhal has obtained it by invocations of his heathen gods. 'When they learned this, they cast the whale into the sea, and committed their fate to God. The weather then mended, and it became possible to row out and catch fish; and thenceforward they did not lack provisions, for they could hunt the animals on the continent, gather eggs on the island, and catch fish on the sea.'

They now determine to proceed further in search of Wineland; but as they disagree as to the direction in which to steer, they separate; and Thorhal and nine other men take their course northwards past Furdurstrandi and Kialarness; a strong west wind drives them upon the coast of Ireland, where they are made prisoners.

Karlsefne and his people proceed southwards along the coast. 'They sailed a long time, until they came to a river that flowed down from the country, and ran through a lake into the sea; there were dangerous shoals in this place, and they could not get into the river except at high tide. Karlsefne sailed with his people into the mouth of the river, and called the place Hopi. They found on the land self-sown wheat-fields in the low soils, and vines on the rising grounds. Every rivulet there was full of fish. They dug trenches where the dry land began, when the water was highest in the river; and when the sea receded, there were flounders in the trenches: there were many animals of all kinds in the woods. They remained there half a month, and amused themselves, and saw nothing new; their cattle they had with them.'

One morning early, however, they are surprised by the sight of a great many Skrælings or Esquimaux, who arrive in small boats made of skins, and enter into peaceful traffic with them, exchanging costly furs, and particularly the skins of the gray fox, so highly prized among the ancient Scandinavians, for small strips of red cloth, which they tie round their heads. At this juncture Karlsefne's bull issued roaring from the wood, and scares away the Skrælings, who take to their boats, and disappear in a southerly direction. After the lapse of three weeks, however, they return with hostile intent. A battle ensues, in which the brave Northmen fly before the uncouth and mysterious instruments of war of this unsightly people; but Freydis, more courageous or less imaginative than her countrymen, makes a stand against the Skrælings, and in her turn takes them by surprise, and drives them away.

'But Karlsefne and his people now thought that they could perceive, that though the country possessed many advantages, they would always be in fear of the hostility of the earlier inhabitants. They therefore prepared for their departure, and intended to return to their own country. They now sailed northwards along the coast, and met with five Skrælings in fur pelisses, who were sleeping near the sea. They had with them boxes, in which there was the marrow of animals mixed with blood. Karlsefne's people thought that they understood as much as that these people had been banished from their country: they killed them. After this they arrived at a promontory on which there was a great number of

animals; and the promontory was everywhere covered with dung, because the animals slept there at night. Now they reached Straumfiord again, and they found there in abundance everything they required. Some people say that Biarne and Gudrid remained there with one hundred men, and never proceeded further; but that Karlsefne and Snorri, with forty men, sailed southwards, and were no longer at Hopi than hardly two months, and returned the same summer. Karlsefne then sailed with a ship to seek for Thorhal the Huntsman, but the others remained behind; and they sailed north past Kialarness, and were then carried westwards, and the land was on their larboard side. There were desert woods everywhere as far as they could see, and very few open glades in them. And when they had sailed a long while, they came to a river that flowed down from the country from east to west. They entered the mouth of the river, and moored their vessel to the southern shore.'

In this place Thorvald Ericson is killed by an arrow, shot at him by a man represented as having had but one foot. They again proceed northwards, and fancy that they have discovered the land of the one-footed beings, and determine not to abide there. 'They were of opinion that the mountain range which they saw at Hopi, and the one which they met with here was one and the same, and they observed that there was an equal distance from Straumfiord to both these places. They remained the third winter in Straumfiord.'

In this last-mentioned place Karlsefne's son Snorri was born; and when they again leave it, they meet with some Skrælings, who tell them that opposite their country is another, in which the inhabitants wear white habiliments, and carry long poles before them, to which are attached small pennants, and that they speak in a loud voice. Upon which the Saga writer observes, that 'people believe that this must have been Elvittramannaland (the Land of the White People), or the Great Ireland.'* The Saga ends with the relation of Karlsefne's and Gudrid's return to Iceland after a short sojourn in Greenland, and their permanent settlement in the former country; and to it is appended a genealogical table, carried down to the fourteenth century, of the distinguished Icelanders who have descended from this famous couple.†

Although, as mentioned above, there are points of difference between the two Sagas, the extracts here given prove, that with regard to the main facts in which we are interested—namely, the discovery, geographical position, configuration, and natural features of the new countries—they coincide in a most striking manner. Indeed the want of agreement as to

* Allusions to this country are made in several of the Sagas of the north; and though its geographical position is nowhere more distinctly indicated than as being six days' sailing west of Ireland, and not far from Wineland the Good, its name is associated with the romantic histories of several individuals of note. Those who have most faith in these ancient records believe that a country answering this description was really known during the middle ages, and that it likewise formed part of the American continent. A theory of the population of America by Irish colonists has been founded on the mention of its name in ancient documents, but has never been authenticated.

† This genealogical table has been further carried down to our day, and includes the names of Albert Thorvaldsen, the great Danish sculptor, and of Professor Finn Magnusson, one of the most pre-eminent among modern Danish antiquaries.

subordinate and collateral matters tends to confirm the trustworthiness of those statements which are alike in both Sagas; for it renders it highly probable, as has already been observed, that the narratives have originated in different localities distant from each other; that the information contained in them has been derived from distinct sources; and that the one chronicler has not been in anyway cognisant of the work of the other. As Eric Red's Saga gives the most detailed accounts of the expeditions of the Greenland colonists, but, on the other hand, contains an error relative to one of Karlsefne's descendants, of which it is supposed no resident in Iceland could have been guilty, it is thought likely that the original Saga of Eric Red may have been composed and committed to writing in Greenland long before it was transmitted to Iceland. And this is the more probable, as it is evident that the above-quoted passages, which we have given as they are found in the 'Flatö Annals,' are extracts from a more extensive work—a work now unknown, though frequently alluded to in contemporary manuscripts. That Karlsefne's Saga—which gives the fullest accounts of the exploits of its hero, and passes over in silence several of the expeditions to Wineland undertaken by the children of Eric Red—was written in Iceland there can of course be no doubt: and an observation of the compiler of the 'Flatö Annals' at the conclusion of Eric Red's Saga—namely, 'Karlsefne has of all others most accurately recounted all the circumstances regarding the voyages of which something has here been related'—seems to indicate that Karlsefne himself has been the original narrator of the Saga which bears his name. The imperfect knowledge which we have of everything relating to the personal history of the early Greenland colonists precludes the possibility of any conjectures as to who may have been the writer of Eric's Saga; but as two bishops of Iceland—Thorlak (born 1085, died 1133), Brand (elected 1163)—were lineal descendants of Karlsefne's son Snorri, who was born in Wineland, and a third bishop, Brand (elected 1146), was a lineal descendant of a younger son of Karlsefne, it is supposed that one of these three learned men has committed to writing the traditional accounts of the bold undertakings of their illustrious ancestor. Be this as it may, the discovery of Helluland, Markland, and Wineland, is not only affirmed by these two Sagas—the authenticity of which there is as little reason to doubt as that of any other ancient historical documents—but it is, moreover, corroborated by many other Icelandic annals held high in esteem, and dating from a period anterior to Columbus's discovery of America; and which either give condensed accounts of the voyages of which Eric Red's and Karlsefne's Sagas treat more at length, or make casual allusions to Wineland, &c. as to countries the existence of which is not disputed. So far, indeed, were the Icelanders of that period from entertaining any doubts on the subject, that accounts of these countries held a place in their didactic geographical works, as is proved by several fragments extant.

'The world,' says one of these monuments of the geographical knowledge of the north in the middle ages, 'is said to be divided in three parts, each having a distinct name. The one part is called Asia; this stretches from north-west to south-west, and comprises the middle of the earth. In this part of the world there are three Indies: in the most distant India the Apostle Bartholomew preached the faith, and in this India he gave his life

for Christ's name. In that India which is nearest to us the Apostle Thomas preached the Christian religion, and there he died for God's sake. In that part of the world called Asia is the city of Ninive; it is the largest of all cities: it is three days' journey long, but one day's journey in breadth. In that part of the world is also Babylon the Ancient and the Great, where King Nebuchadnezzar reigned, but which is now so ruined that people cannot dwell there on account of snakes and all kinds of noxious animals. In Asia is also Jerusalem, likewise Antiochia, where the Apostle Peter established a bishop's see, and where he said mass for the first time. In the Great Asia is a country which is called Little Asia; there the Apostle John preached the faith, and there is his grave in the city called Ephesus. It is said that four rivers issue from Paradise: the one is called Phison, or by another name Ganges; it flows out into the sea which surrounds the earth, and which, in the book language, is called Oceanus. Phison has its source in the mountain called Orcobares. The second river, which issues from Paradise, is called Tigris; the third is called Euphrates; they both flow out into the Middle Sea (Mediterranean) near Antiochia. Euphrates flows through the Old Babylon, and runs into the sea in the vicinity of Antiochia. The Nile, or Geon, as it is also called, is the name of the fourth river which has its source in Paradise; it separates Asia and Africa; it runs through the whole of Egypt. In Egypt is New Babylon, and the capital city which is called Alexandria. The second part of the world is called Africa, it stretches from south-west to both sides, west and north-west; in this part of the world is Serkland, and three Blueland's. The Mediterranean separates Africa and Europe. Europe is the name of the third part of the world, which stretches from both sides, west and north-west, and runs towards the north. In the eastern part of Europe is the kingdom of Garde (Southern Russia), and there are Holmgard, and Paltesk, and Smolensk. Nearest Garde, in the south, is the Grecian king's dominion. The capital in this kingdom is Constantinople, which we call Miklagard. In Miklagard is the church, which in their language is denominated Hagiasophia, and which the Northmen call Œgisif; this church is the first of all churches of the world in architecture and size. Under the dominion of the king of the Greeks are Bulgaria, and a number of islands that are called the islands of Greece; Creta and Cypria are the two most famous among the islands of Greece. Sicily is a large kingdom, belonging to that part of the world called Europe. Italy is the name of a country which lies south of the chain of mountains called Mundia. In the furthermost part of Italy is Apulia, which the Northmen call Pulsland. In Middle Italy is Rome. In Northern Italy is Lombardy, which we call Langbardaland. North of the mountains, towards the east, is Saxland (Germany), but in south-west Fraeland (France). Hispania, which we call Spanland, is a great realm, situated south by the Mediterranean, between Langbardaland and Fracland. The Rhine is the name of a great river which flows from Mundia northwards between Saxland and Fracland. In the region encircled by the arms of the Rhine is Friesland, northerly towards the sea. North of Saxland is Denmark. Through Denmark the ocean runs into the Baltic Sea. Sweden is east of Denmark, but Norway north. North of Norway is Finmark; thence the land turns towards the north-east, and then to the east, before one arrives at Biarmeland, which pays tribute to the king of Garde. From Biarmeland the country

stretches as far as the desert regions in the north, until Greenland begins. From Greenland lies southerly Helluland, then Markland; thence it is not far to Wineland, which some believe goes out from Africa. England and Scotland are one island, yet each country is a kingdom by itself. Ireland is a large island. Iceland is also a large island north of Ireland. All these countries are in the part of the world called Europe.'

All the Sagas relative to the discovery of America agree in attributing the same natural features to the divers lands discovered, and all make mention of the grapes and wheat which they produce; and as even the annals of Iceland in the thirteenth century mention expeditions to Markland, the fact of the discovery, in the eleventh century, of certain countries to the south-west of Greenland and Iceland, and of this discovery having been recorded in writing almost three centuries before Columbus's discovery of America, is in the present day admitted by all to be established beyond a doubt. But when these Icelandic documents first came to the knowledge of the learned, so confident a conclusion could not be entertained, for at that period the establishment of Scandinavian colonies in Greenland, which may be said to form the premises of the syllogism, was a fact resting on no other testimony than that of these very Sagas, and of some vague traditions about ancient commercial relations between Norway, Iceland, and Greenland. Upon the subject of these colonies, however, the Sagas gave, not vague and superficial information, such as that relative to the discovery of the countries now supposed to have been parts of the American continent, but on the contrary furnished descriptions so full and detailed, and so much at variance with any idea which the mind could form to itself of settlements in a country situated between fifty-nine degrees and eighty degrees north latitude, in the regions of eternal ice, that it is not astonishing that their testimony was to a certain degree doubted. According to the Icelandic documents bearing upon the Greenland colonies, the latter flourished upwards of four hundred years; and far from being merely the scattered and unorganized settlements of a few self-exiled men, eking out a joyless existence in one of the most inhospitable climes of the earth, they formed organized societies, governed according to the same laws that ruled in Iceland, presided over by a Lagmand, or chief magistrate, and enjoying a state of wellbeing which even surpassed that of the parent state. The country is described as being richer than any other in fish and marine animals of various descriptions; and though it is allowed that the coasts present to the eye nothing but high, steep, and naked crags, and stupendous icebergs, the shores of the fiords that stretch far into the country are described as affording rich pasture-lands for numerous herds of cattle, horses, goats, and sheep. The butter and cheese of Greenland are extolled as of most superior quality; and the Iceland and Norwegian ships which carried corn and other necessaries to the colonists, returned with rich cargoes of hides, peltry, dried fish, and walrus tusks. The good name which Eric Red gave the country attracted numerous immigrants, who formed two distinct settlements, separated from each other by a desert region of great extent, and denominated, according to their position it is supposed, Eystribyggd and Vestribyggd—that is, Eastern and Western Settlement. Ericsfiord, where Eric Red took up his abode,

is described as being in the Eystribyggd, which was by far the most flourishing settlement; and Eric's place of Brattelid became in the sequel the residence of the chief magistrate of the colony. The Vestribyggd is represented as having numbered ninety Byggder—that is, inhabited places—and four or five churches; while in the Eystribyggd the number of Byggds amounted to 190, and that of the churches to twelve, besides several convents and monasteries. The ecclesiastical affairs of the settlements were directed by native bishops, twelve of whom are mentioned by name, and in order of succession, in the annals of Iceland. In consequence of the greater fertility of the soil, and the comparative mildness of the air in the deep recesses of the fiords, the majority of the settlements were made in such localities, but some were also located at the mouth of the firths or fiords, or on the small islands off the mainland.

In some of the Sagas mention is made of stone weapons, remnants of skin boats, and other traces of the presence of human beings having been found by the first settlers in Greenland: but years seem to have elapsed before the latter came into contact with the people, who were ultimately to exterminate them in the land of their adoption. The precise date of the first encounter between the two races is not given, but from the little surprise manifested by Leif, Karlsefne, and their followers at the appearance in Wineland of the people, who, from the description given, it is evident were Esquimaux, and from the readiness with which the name of Skræling, indicating a weak and puny being, is applied to them, it would almost seem that they must have been previously well known to the Northerns. However, no particular mention is made of further intercourse between the Scandinavian settlers and the Esquimaux in Greenland until the year 1379, when, it seems, the latter made a hostile descent on the Vestribyggd. When the news of this reached the Eystribyggd, the Lagmand set out with an armed force to rescue the men of the sister colony; but on his arrival, it is said, he found no living creatures except the herds and flocks roaming about in a state of wildness. The homes of the Northmen were laid waste, and all traces of their ravagers had disappeared.

The next information obtained about the Greenland colonists is from a source very different from that which furnishes the preceding details. It is a document found in the archives of the Vatican at Rome, and which throws some light upon the fate of the settlers in Greenland at a period subsequent to any mentioned in the Icelandic, Danish, or Norwegian annals. This document is a brief of Pope Nicholas V., dated 1448, and addressed to two bishops of Iceland, urging them to take measures for the support of those remnants of the church in Greenland that had escaped the dreadful calamity which had befallen the colonists thirty years previously, when a fleet of heathen barbarians, coming from the neighbouring countries, had attacked their villages, carried off the inhabitants, desecrated the temples of God, and laid waste the whole colony, so that only nine of the most distant parishes in the mountainous districts had escaped. Probably the Iceland bishops disregarded the papal admonition, for the annals make no mention of any efforts in this direction; and long before this period the intercourse between Iceland and Greenland seems entirely to have ceased. The causes of this cessation of intercourse are nowhere distinctly stated; but it is sup-

posed that the dreadful pestilence which appeared in Europe in 1394, and was known in the Scandinavian countries under the name of the Black Death, and the Beggars' Death, which extinguished entire populations, and spread devastation even through the most fertile provinces of the earth,* must have reached Greenland also just at the period of the hostile attacks of the Esquimaux, and have reduced the hardy and energetic Northmen to a state of exhaustion rendering them easy victims of a race otherwise mentally and physically so inferior to them. In the mother country also matters had changed for the worse. The Iceland commonwealth, the flower of whose population had been carried away by the pestilence, had lost its independence; in Denmark and Norway the internal dissensions which preceded and followed the Calmar union absorbed all minds; and the monopoly of trade usurped by the government paralysed individual enterprise. Thus the Greenland colonies were forgotten. At the same time nature also seemed to join the general conspiracy against the existence of these once flourishing settlements. The ice in the polar seas, it is stated in the Sagas, began to place greater difficulties in the way of navigation than before, and for some time at least few mariners were found bold enough to hazard such expeditions into the northern seas as had been undertaken by their more adventurous predecessors. Thus Greenland sank gradually into almost utter oblivion; and the sudden and complete, and seemingly causeless disappearance of flourishing colonies, which had endured upwards of four centuries, was an event of so surprising a nature, that it is not to be wondered at that, in spite of vague traditions and written Sagas, the world in general was disinclined to believe that they had ever existed. However, Columbus's discovery of the West Indies in 1492 gave a new impetus to the spirit of maritime enterprise in Europe, and the ardour of discovery which animated all maritime powers at length extended to Scandinavia also. Eric Walkendorff, archbishop of Trondhiem during the reign of Christian II., was the first who planned the re-discovery of Greenland; but his plans were thwarted; and though under the subsequent reigns several expeditions were fitted out for the purpose of re-establishing intercourse between the Scandinavian countries and Greenland, several proved entirely abortive, and in the most favourable cases the ships merely touched some point on the west coast of Greenland. Not until upwards of two hundred years after Sebastian Cabot had explored Newfoundland and the whole coast of North America, were the homes of the first discoverers of these lands revisited by the descendants of their race. Thus, when Thorfæus wrote his work upon ancient Greenland,

* Captain Graah of the Danish navy, in his work 'Narrative of an Expedition to the East Coast of Greenland in Search of the Lost Colonies,' throws out the surmise, that the kidnappers of the Greenland colonists may have been Englishmen, and not Esquimaux, because, he says, 'it seems to have been customary in England, whenever that country was ravaged by the pestilence called the Black Death, to carry off (for the purpose, probably, of supplying the loss of population) the inhabitants of those countries of the north that it had spared. Complaints against this procedure are known to have been made repeatedly in the reigns of Margaret and her successor; and in the year 1433 a treaty was concluded between Denmark and England, wherein it was expressly stipulated, that "with regard to all those persons who have been carried away from Iceland, Finmark, Helgeland, and other places, and are still detained in his dominions, the king of England shall take measures to the end that they may be set at liberty."'

the existence of these ancient colonies still rested, as before observed, on the testimony of early manuscripts, in which it was evident that some portion of fiction was mixed up with the truth, and to trace the limit between the two, without the aid of other data, was therefore very difficult. In 1721, however, Hans Egede, a Norwegian clergyman, animated by the purest benevolence, and a holy zeal for the propagation of Christianity, accomplished what so many had attempted in vain. Having by his importunities induced the Danish government to send out an expedition to Greenland, he landed on the 3d May 1721 on an island off the west coast, in latitude 64°, to which he gave the name of Hope Island, and where he planted his first colony. Of descendants of European colonists he met with none; but traces of the former existence of these colonists were soon found to abound on the coast, on the shores, and in the deep recesses of the fiords, where numerous ruins of human habitations, built of stone, and of churches of rather considerable dimensions, were discovered in situations exactly corresponding with the descriptions in the ancient Sagas; and thenceforward the value of these narratives as historical documents may be said to have increased tenfold. The only circumstances relative to Greenland in which the Sagas may still be deemed incorrect, is their description of the mildness of the climate; the rich pastures, which furnished food for numerous herds and flocks; and their having located the most flourishing settlements on the east coast: whereas it is at present proved that the climate is so rigorous, that the soil can barely produce scanty herbage for a few sheep during a couple of months in the year, and that the east coast, as far as it has been possible to explore it, is so ice-bound, as to be very rarely accessible—presenting in a much higher degree than the west coast all the worst features of the country. As regards the climate, it may, however, be answered, that it is possible that the cold may have increased in these latitudes during the course of centuries, particularly as the experience of the whale-fishers of the present day tells us that the fields of ice in the seas surrounding Greenland are yearly increasing in extent. There is so much the more reason to conjecture that this may be the case, as a minute but very interesting archæological monument, found in Greenland in the year 1824, proves, that at the period when this monument was deposited on the spot where it was found after the lapse of centuries, Europeans were able to winter in a latitude where at present they cannot live except during the warmest period of the year.* Respecting the second point—namely, the situation of the Eastbyggd—the error may lie with the moderns, and not with the ancients, as has been suggested by Captain Graah; for though the latter have distinguished the Byggds by the adjuncts East and West, this was perhaps only meant

* This monument is a small stone, about four inches long and one inch broad, found in the island of Kingitoarsuk, on the west coast, under latitude 72° 55', bearing a Runic inscription and date, proving it to have been deposited on the spot in the twelfth century (the date is by one antiquarian believed to be 1170, by another 1135), in the month of April, in token of two individuals mentioned having taken possession of the land. According to the inscription, the stone was deposited under a heap of other stones, as was the custom of the times; but when found it was lying quite bare, high up the side of a cliff. It is supposed that the heap of stones placed around it, to mark its position, had been displaced by storms, or by the ice-bears—it being usual with these animals, when they are pursued, to scatter stones and earth about them.

to indicate their relative position; and the ancient colonists may have been as little acquainted with the east coast as we are at the present day. Besides, ignorant of the true configuration of the country, as with their limited means of observation they must necessarily have been, they may have believed themselves to be on the eastern side when in reality they were on the south-western coast. However this may have been, this is a point which future explorations may settle; but there is one problem which we cannot hope to see solved by any discovery made in those regions—namely, the question as to which were in reality the countries discovered by the ancient Northmen to the south and west of Greenland and Iceland. All inquirers, without exception, agree that the direction in which the countries were found leaves no doubt as to their having formed part of the North American continent, but as to which part opinions have been and still are very various. With reference to this question, the Sagas afford no other guidance than that contained in the description of the various coasts and islands visited, and of their natural products and climate; and the passage in Eric Red's Saga, which, following Raffn's Danish translation, we have given thus:—'Day and night were more equal than in Greenland and Iceland, for on the shortest day the sun was there above the horizon from half-past seven o'clock in the morning until half-past four o'clock in the afternoon.' The Icelandic words *dagmalastadr* and *eyktarstadr*, which indicate the times of the day, have, however, been variously interpreted; and therefore this passage, which, if accepted in the same sense by all, would at once fix the latitude of Wineland, continues to be a debatable point. Raffn's interpretation, besides being in consonance with that of Vidalin, Schöning, and Suhm—northern antiquaries and historians of the eighteenth century of no mean pretensions—is, we believe, accepted by all Scandinavian antiquaries of the present day, and has in England been subscribed to by Mr Beamish. These various authorities, accordingly, agree in regarding the United States of America as the Wineland of the Northmen. Among the elder Scandinavian writers, Thorfæus, Pontoppidan, and Malte Brun, however, entertained different opinions; and the correctness of the views of the latter, who incline to the belief that the Northmen did not reach a more southern point than Newfoundland, is warmly maintained by Mr Laing.

Though it cannot be denied that the descriptions in the Sagas are such as may be applicable to more than one locality, it must be confessed that Professor Raffn's theory has in its favour not only striking resemblances between the localities pointed out by him, and the points held in view by the Northmen, but that it is borne out by the natural products of the countries and by the mildness of the climate. Whereas those who will not admit that the northern discoverers of America proceeded further south than Newfoundland, are obliged to reject as fabulous the accounts of grapes and wheat (or maize)* having been found growing spontaneously in the countries discovered, as also various other circumstances mentioned in the Sagas;

* There is nothing strained in supposing the 'self-sown wheat' of Wineland to have been maize, which was found growing in these latitudes by the Europeans when they first colonised the countries, and can be traced back as indigenous in America at a very remote period, for to this day maize has no other name in the Danish language than 'Turkish wheat.'

thus, while allowing the perfect trustworthiness of these ancient documents as far as regards the accounts of new countries discovered, representing them as utterly undeserving of credit in all that relates to the most striking features of the countries! Mr Laing supposes the accounts of the beauty of the climate and the country, and of its southern products, to be subsequent interpolations in the Saga; but Adam of Bremen, who wrote in the eleventh century, already mentions that he had learnt that grapes grew in the countries discovered by the Greenland colonists. As regards the determining of the latitude of Wineland by the extent of time which the sun is said to have been above the horizon, Mr Laing expresses his views as follows:—'The first question that arises to the doubting reader is how, in Leif Ericson's time—that is, about the year 1000, when Christianity was scarcely introduced, and church festivals, church time, and the knowledge and prayers of churchmen unknown—did the Icelanders divide time? The whole circle of the horizon appears to have been divided by them into four quarters, each subdivided into two, making eight divisions or attir (from which our old word airths, applied to the winds, seems derived); and these eight watches, each of three hours, made up the day, which we divide into twenty-four parts. It was not until 120 years after Leif's voyage—namely, in 1123 - that Bishop Thorlak established in Iceland a code of church regulations or laws, by which time was more minutely ascertained for church prayers and observances. For all secular business, among a seafaring and labouring population, the division of time into eight watches was sufficiently minute for all their practical purposes. Now the Saga says, "Sol havdi thar Eyktarstadr ok Dagmalastadr um Skamdegi;" which clearly means that on the shortest day they had the sun in the watches called the Dagmalastadr and the Eyktarstadr; that the sun rose in the former, and set in the latter, and not, as in Iceland, where the rising and setting were, on the shortest day, included in one watch. The dagmalastadr was the watch immediately before the mid-day watch (middegi), and the eyktarstadr that immediately after. Now if we reckon from noon, the middle of the mid-day watch, it would begin at half-past ten o'clock of our time, and end at half-past one o'clock; dagmalastadr would begin at half-past seven, and end at half-past ten; and eyktarstadr begin at half-past one, and end at half-past four in the afternoon. Now if the sun rose any time within the dagmalastadr, and set any time within the eyktarstadr watch—that is to say, any time between half-past seven and half-past ten for its rising, and any time between half-past one and half-past four for its setting—it would answer all the conditions of the text of the Saga, which merely says they had the sun in these watches, not during the whole of these watches; and the precision of ideas and expressions which characterises the Icelanders would undoubtedly have expressed, if that had been the meaning, that the sun rose at the beginning of dagmalastadr and set at the end of eyktarstadr. Thorfæus, certainly not inferior in judgment and knowledge to any antiquary of our times, and who, as a contemporary and friend, had on every doubtful point the opinion of Arne Magnæus, the first Icelandic antiquary who has ever appeared, makes out from the same text that the sun may be considered to have been above the horizon from the middle of dagmalastadr to the middle of eyktarstadr—that is, about six hours—which would correspond

to a latitude of 49 degrees instead of 41 degrees; and he, and Arne Magnæus we may presume with him, bring Vinland to some place in Newfoundland, or in the St Lawrence, which certainly would agree better with the description of the people and products—excepting the ready-made wine, the spontaneous wheat, and the fine wood—than the Taunton river in Massachusetts.'*

In a treatise contained in the Mémoires of the Royal Society of Northern Antiquaries in Copenhagen, Professor Finn Magnusson has given an explanation of the ancient Icelandic mode of measuring time, and of the terms dagmalastadr and eyktarstadr, somewhat different from that of Mr Laing, and which establishes the correctness of Professor Raffn's interpretation of these terms. According to this treatise—the authority of which is further strengthened by its being based upon the evidence of several elder and very eminent Scandinavian scholars—the ancient Scandinavians divided the horizon into eight grand divisions, corresponding to the four cardinal points of our compass and their four principal subdivisions. Each of these grand divisions was termed *átt* or *ætt*, the word being supposed to be derived from the numeral *átta* (eight), common to all the German-Gothic languages. Each *átt* was again subdivided into equal portions by a bisecting line termed *midt á milli*—that is, right in the middle. The times of the artificial day, *dagr*, or of the natural day, *dægr*, were divided according to the sun's apparent motion through the grand divisions of the heavens, three hours being calculated to elapse during its course through each *átt*; and the natural day was thus likewise divided into eight equal parts, each comprehending three hours, and called *eykt*—this word being a derivative of *ætt*, and signifying likewise an eighth part. Like the eight grand divisions of the horizon, each *eykt* of the natural day was subdivided into two equal portions, called *stund* or *mál*, each of which thus comprised one hour and a-half according to our mode of measuring time. Each *stund* or *mál* had a name assigned to it, in accordance with the event which it seemed to mark—as, for instance, *dagmál*, indicating the commencement of the day; *natmál*, the commencement of the night; *hirdis rismál*, the shepherds' rising time, &c. &c.; and their course was marked by the sun's passage across certain points on natural or artificial objects in the locality, selected for the purpose, and termed *dagsmörk* (day-marks). Besides denoting in general the aliquot portions of the day and night, the term *eykt* was also used to designate the eighth division of the natural day; but then the word *dags* was most frequently (at least in Iceland) added to it. By reference to the ancient laws and Sagas, it has been ascertained that the ancient inhabitants of the north reckoned the commencement of the natural day from half-past four o'clock in the morning, which hour was termed *hirdis rismál*, the shepherds' rising time; and down to the present day this continues to be the rising time of the Iceland peasantry in the haymaking season; though originally, as it would appear, the shepherds rose earlier than any of the other inmates of the farm, because, according to a legal regulation, they were bound to have gathered together their roaming flocks, which frequently strayed during the night, by a given hour in the morning. Reckoning from the *hirdis rismál*, as the beginning of the day, the eighth

* Chronicles of the Kings of Norway, vol. i. p. 173.

mál, or eighth half *eykt*, which was termed *eykt-dags*, commenced at three, and ended at half-past four o'clock in the afternoon. The limiting line of this aliquot portion of the day was termed *eyktarstadr*, or the *eykt's* place, or limit, or termination; and the precise moment when the sun appeared therein indicated the termination of the day proper, and the commencement of the evening. It was a general rule, when reference was made to the length of the day, that the word *stadr*, added to the name of a *mál* or *stund*, if the time were morning, indicated the rising of the sun in or nearest the beginning of the aliquot portion of the day designated by it; but if the time were afternoon, it showed that the sun set at or towards the close of the portion of time comprised within the *stund*. Now, it having been ascertained beyond a doubt that the *dagmál* of the ancient Icelanders commenced at half-past seven in the morning, if we accept of the authority of Vidalin, Johnson, and Thorlacius, upon whose evidence the assertion is founded, the words *dagmalastadr* and *eyktarstadr*, as used in Eric Red's Saga, are by no means so vague as Mr Laing would give us to understand. On the contrary, they seem distinctly to intimate that in Wineland the sun was above the horizon from half-past seven in the morning until half-past four in the afternoon; and it is in accordance herewith that Professor Raffn and the other antiquarians of the north locate the spot in Wineland, where the observation was made, in latitude 41° 24′ 10″.

As regards the astronomical knowledge of the ancient Scandinavians, Finn Magnusson cites Sagas from the beginning of the eleventh century, wherein mention is made of a rich chieftain, Randulf of Oesterdal in Norway, who taught his son Sigurd the science of computing the course of the sun and the moon, and of other celestial bodies, and recommended him particularly to observe those stars which mark the lapse of certain periods of time, so that he might know what time it was when he could see neither sun nor moon. But there are similar accounts of Icelandic chieftains during the strictly heathen period having with equal attention observed the movements of the heavenly bodies, with a view to determining the evolutions of the wheel of time; and evidences are not wanting of their belief in astrology, which was indeed intimately connected with their mythology and rituals.

In the ancient Icelandic work called 'Rimbegla,' which contains rules for the measurement of time, for the study of astronomy, geometry, &c. there are among other treatises, compiled and translated from foreign works, some astronomical calculations by an Icelander named Odd, who lived about the year 1000, and who, taught by oral traditions handed down in his family, and by his own personal observations, had attained so accurate a knowledge of the motions of the celestial bodies, that the regulations of the Christian year were founded on the information received from him. But besides all the evidence contained in the ancient writings of the Icelanders, and in the Scandinavian mythology, the very fact of distant maritime expeditions in unknown seas being constantly and successfully undertaken by the Scandinavians, prove that they must have had some knowledge of astronomy; and as ancient historians affirm that instruments for measuring time, as well as the movements of the celestial bodies, were at a very early period in use among the Ostrogoths, the Burgundians, and the Germans, it is not too much to suppose that the same has been the

case among the seafaring nations of the same race, who were constantly coming into contact with foreign nations in a more advanced stage of civilisation than themselves. As regards the case in point, it will be perceived that the discoverers of America may be supposed to have possessed even an unusual amount of knowledge on these subjects; for Leif Ericson was educated by the Southern German Tyrker, and Thorfin Karlsefne was not only a descendant of an illustrious house, but had, moreover, long traded with England, Scotland, and Ireland, the inhabitants of which countries in the eleventh century were by no means barbarians. An old Norwegian manuscript, called the 'Konung's Skuggsio' ('King's Mirror'), written in the twelfth century, gives a favourable idea of the education of the Scandinavian merchant-mariners of the middle ages. In this book the merchant is exhorted to make himself acquainted with the commercial and maritime laws of all countries, as also with foreign languages, but more particularly the Latin and the Italian, which were then most generally diffused. He is further recommended to study the phases and motions of the celestial bodies, and to make himself acquainted with the art of determining the hours of the day, with the divisions of the horizon, the ebb and flood tides and currents of the sea, the climates, and the distinguishing features of the countries thence arising, the seasons of the year most favourable to navigation in the different seas, the equipping and rigging of ships, the judicious investment of capital, arithmetical calculations, &c. The merchant was, besides, expected to distinguish himself by polished and decorous behaviour, and in every way to do honour to a calling which was held in high esteem. If such were the acquirements expected from a merchant and mariner in the twelfth century, there is reason to presume that he may have possessed some of these qualifications in the eleventh century, and that his scientific attainments may, at the last-mentioned period, also have greatly surpassed those of the generality of his countrymen.

Having now examined how far the astronomical evidence of the Scandinavian discoverers of America having reached latitude 41 degrees, is deserving of credit, we will now follow Professor Rafn from point to point in the different localities which he designates as those visited by the early northern voyagers, and observe how far the modern descriptions of these countries coincide with those given in the Sagas. From information contained in the 'Landnamabok,' and various ancient geographical works of Iceland, it is inferred that a day's sailing among the ancient Scandinavians was equivalent to twenty-seven or thirty geographical miles of fifteen to a degree. From the last land seen by Biarne, and the first subsequently visited by Leif, the former arrived at Herjulfsness—now Ikigeit in Greenland—in four days, sailing with a strong south-west wind. As the island of Newfoundland is situated in the direction indicated, and at a distance of about one hundred and fifty miles from the promontory of Ikigeit, and this distance, it is supposed, might, with a very high wind, be traversed in the time mentioned, and, as moreover, the modern voyagers describe the island as presenting to the eye of the mariner the same flat and barren rocks, unrelieved by any trace of verdure, which are mentioned in the Saga as forming the characteristic features of the land discovered, and as having obtained for it the name of Helluland, the identity of Newfoundland and Helluland is considered established beyond a doubt.

Subsequently, it seems, the name of Little Helluland was given to this island; and Labrador, which is probably the Helluland of Karlsefne's Saga, was denominated Helluland it Mikla, or the Great Helluland. This country is described by a writer in the fourth volume of the 'Philosophical Transactions' as follows:—'This vast tract of land is extremely barren, and altogether incapable of cultivation. The surface is everywhere uneven, and covered with large stones, some of which are of amazing dimensions. There is no such thing as level land. It is a country formed of frightful mountains and unfruitful valleys. The mountains are almost devoid of every sort of herbage. A blighted shrub and a little moss are sometimes to be seen, but in general the bare rock is all you behold. In a word, the country is nothing more than a heap of barren rocks.' Even the minute feature of the foxes is not wanting to complete the resemblance between Labrador and the land discovered by Karlsefne, for the same author mentions that these animals are there very numerous.

The land in the south-west, to which was given the name of Markland, and which the Northmen describe as 'flat and covered with wood; and wherever they went there were large tracts of white sand, and the coast was low,' is supposed to have been Nova Scotia, New Brunswick, and Lower Canada. The first-mentioned country is indeed described by modern geographers in terms almost similar to those used by the Icelanders, it being represented as level and low to the seaward, the coasts being lined with cliffs of exceedingly white sand, which particularly strike the eye of the mariner; and all three countries are even to the present day covered with extensive forests. The island which Karlsefne's Saga mentions as lying 'outside the land in north-east,' and to which the Northmen gave the name of Biarney, in consequence of their having killed a bear there, is by the northern antiquaries determined to be Cape Sable; while the island where Leif and his followers first landed, after leaving Markland, and having sailed a day and a night with a north-west wind, and where they observed the sweetness of the dew on the grass, is supposed to be a small island off Cape Cod, where honey-dew still abounds. The distance between Cape Sable and Cape Cod is in nautical works set down as fifty-two geographical miles west by south, and this agrees well with the amount of time which the Northmen spent in traversing it—a day and a night's sailing; being, in accordance with what is stated above, equivalent to from fifty-four to sixty miles. The land and the island between which ran the sound into which Leif next entered, holding to the west past the promontory, are laid down on the maps of the northern antiquary as the peninsula of Barnstaple and the island of Nantucket, round which island, according to modern navigators, there are dangerous shoals and numberless sandbanks, the whole sound bearing the appearance of drowned land—features which strikingly coincide with the facts mentioned in the Saga. Still more remarkable, however, are the points of resemblance between the description of Kialarnas and Fudurstrandir—the first land reached by Karlsefne after leaving Markland—and the description of Cape Cod, together with Nauset Beach, Chatham Beach, and Monomoy Beach, which form the western shores of the promontory, given a few years ago by Mr Hitchcock in his Report on the Geology of Massachusetts. 'The dunes or sandhills,' says this author, 'are either entirely or in a great measure devoid of vegetation,

and forcibly attract the attention on account of their peculiarity. As the traveller approaches the extremity of the cape, the sandhills increase to such an extent that in several places nothing is wanting to make him believe himself in the deserts of Arabia or Libya but that a troop of Bedouins should cross his path.'

A remarkable phenomenon observed in this American desert, and which perhaps obtained for it the name of Fudurstrandir (the Wonderful Strand), by which the Northmen designated it, is described as follows by the same author:—'While traversing the deserts of the cape, I remarked a singular effect of *mirage*. At Orleans, for instance, it seemed to me that we were ascending at an angle of three or four degrees, and I was not convinced of my error until, turning round, I observed that the road which we had just traversed seemed to ascend in like manner. I cannot undertake to explain this optical illusion; I will only observe, that it is probably a phenomenon of the same nature as that which struck Humboldt in the pampas of Venezuela, and relative to which he says, "all around us the plains seemed ascending towards the skies."'

If the previous points be accepted as correctly laid down, our readers will probably not refuse to recognise the identity of the Straumey of Karlsefne's Saga, 'round which went strong currents,' and the island now called Martha's Vineyard, and situated to the south of Barnstaple, or another small island at the entrance of Vineyard Sound, called Egg Island, on account of the great number of eggs of aquatic birds found there—a circumstance which further coincides with the description in the Saga. Straumfiord is supposed to be Buzzard's Bay, in which strong currents are created by the great gulf-stream, which, issuing from the Gulf of Mexico, and passing between Florida and Cuba and the Bahama isles, runs northward parallel with the coasts of the United States, until it finds, as it were, its passage barred by the peninsula of Barnstaple. The Wineland Proper of the Northmen—the locality in which Leif erected his wooden houses, and whence he explored the country, and which, it will be remembered, was reached through a river that communicated with a lake—is believed to have been the northern extremity of the beautiful Rhode Island, commonly called the Eden of America, and the adjacent portions of Massachusetts. It will be seen by the map of these localities, that on the one side the narrow, yet navigable Pocasset river, connects Mount Hope Bay, into which the Taunton river flows from the north, with the Straits of Seaconnet which communicate with the ocean; and on the other side the waters of Mount Hope Bay flow into Naraganset Bay, which opens into the Atlantic. Granting that the Northmen mistook Mount Hope Bay for a lake, to which, indeed, its landlocked character gives it a strong resemblance, this locality in every respect answers to the descriptions contained in both the Sagas. The land in those parts of Massachusetts which border on Mount Hope Bay is somewhat hilly, but not mountainous, and was formerly covered with large forests, which, being inhabited by many wild animals, formed favourite hunting-grounds of the Indians. The gray fox—the fur of which was so much prized by the ancient Scandinavians, and which it is said in the Saga the Northmen purchased from the natives—was, according to American accounts, found in these regions at a later date also. In Rhode Island, wild grape vines still fling their graceful tendrils from tree to tree; maize, if not

wheat, grows there, sown by nature's hand alone; and among the forest trees the maple, the tulip-tree, and several others are remarkable for the beauty of their wood. The mæsur-wood, of which the broomstick was made for which the German bade Karlsefne a price apparently so far above its value, may, it is suggested, have been the wood of the birds'-eye, or curled maple, which grows in this vicinity, and is particularly beautiful. The rivers and bays still abound in fish of various kinds, and among these the flounders or flat-fish, and the salmon mentioned in the Sagas. Even whales still from time to time find their way into these waters. The climate of Rhode Island is, as the Northmen described that of Wineland, so mild that the herbage rarely suffers from the frost in winter; and upon the whole, the country is such as fully warrants the name of Vinland it Goda (Wineland the Good), under which it is frequently mentioned in the ancient Icelandic manuscripts.

Thus as far as we have hitherto gone, the evidence adduced seems fully to warrant the assumption of Rhode Island and Massachusetts being the Wineland of the northern discoverers; but Professor Raffn, not content with following the enterprising voyagers from coast to coast, until at last he lands them in the happy spot denominated the Eden of America, endeavours, moreover, to connect the archæological monuments in these regions which modern research has brought to light, with the supposed presence of the Northmen in the country. By proving too much, he has in a great measure invalidated the rest of his conclusions, for several of his positions having been found untenable on these points, discredit has by some critics been thrown on the whole of his theory, though we do not see that in justice it ought to be so.

Rocks, with rude tracings of men and animals, together with other less definable figures, having been discovered in Rhode Island and Massachusetts, some of the learned bodies in these states forwarded to the Royal Society of Northern Antiquaries in Copenhagen drawings of the rocks, suggesting that the supposed inscriptions on them might contain a record of the Northmen's presence in these localities; and observing that this surmise was strengthened by the fact, that the tracings were evidently made with a metallic instrument, which rendered it improbable that they were the work of the Indians, who were unacquainted with the use of metals at the period of the arrival of the first European settlers. Acting upon this suggestion, Professor Raffn has, with marvellous ingenuity, traced in the disjointed and unconnected lines and figures cut, or rather picked, in one of these rocks situated in Berkley County, Massachusetts, and called the Deighton Rock, Runic characters and Roman numerals, which he interprets as representing the name of Thorfin Karlsefne, and the number of his company. We confess, however, that the examination of an engraving of the Deighton Rock leaves us quite unconvinced on this point; and as the tracings bear a strong resemblance to similar pictorial attempts on rocks in various other parts of America, whither the Northmen never could have penetrated, as also to the Indian paintings on buffalo hides, we deem it more reasonable to conclude that their origin is the same. This opinion is further confirmed by the wonderful discoveries made in America subsequent to the publication of Raffn's work, proving beyond a doubt that the various mounds and other earthworks which the Danish antiquary also connects with the

presence of the Northmen in these regions, and some of which in reality bear a great affinity to the ancient tumuli in Scandinavian countries, owe their origin to a very different race, whose history is still a mystery, but the centre of whose civilisation seems to have been the region now known as Central America.*

Another archæological monument, which may be represented as dating from the visits of the Northmen to America, is a ruin near Newport in Rhode Island, known to the inhabitants of the locality, and to the numerous strangers who flock to this lovely spot in summer, where it forms a picturesque feature in the landscape, as the Old Stone-Mill.* The building measures within the walls about eighteen feet in diameter, and is formed of eight stone pillars about seven feet high, and placed at a distance of from five to six feet from each other, so as to form a circle; the intermediate spaces being arched over, and the whole supporting walls twenty-four feet high, built of rough stones, held together with lime-mortar. Though supposed by antiquaries, on account of the peculiarities of its architecture, to have been originally a baptismal chapel, such as they were built in Scandinavia during the middle ages, this building is, in its character of windmill, not without its history among the people of Anglo-Saxon descent who now dwell around it; for it was mentioned in 1678, in the last will and testament of a certain Benedict Arnold, who seems at one time to have been governor of the settlement. In the year 1663, moreover, twenty-five years after the first settlement of the English in the south of Rhode Island, a memorandum to the effect that in this year the first windmill was built, was made by a Mr Peter Easton, who was in the habit of noting in his pocket-book all the remarkable events occurring in the township. Now those who refuse to believe in any of the evidences of the Northmen having attained a point of the American continent so far south as the locality in question, think the entry in Mr Peter Easton's pocket-book very significant, and conclude from it that the mill therein mentioned and the Old Stone Mill bequeathed by Governor Arnold to his inheritors, must have been one and the same building. This is, however, but an arbitrary assumption, and it is not evident why the epithet 'old' should in 1678 be attached to a mill built in 1663; whereas the name of mill may have been given to the structure because it does in reality bear much resemblance to the fundamental portions and outer walls of a windmill, and is placed on an eminence fully exposed to the winds from all quarters. On the other hand, we confess that it does seem passing strange that so remarkable a fact as the existence of a stone edifice in a locality supposed never before to have been inhabited by civilised people, should have been left unnoticed by the intelligent settlers. Be this as it may, the northern antiquaries are backed by the opinion of such authorities in matters of art and archæology as Boisserée, Klenze, Thiersch, and Kallenbach, who, judging from drawings of the Old Stone-Mill sent from America, have all declared in favour of the ruin being the remains of a baptismal chapel in the early style of the middle ages. It must be further observed, with reference to this monument, that though the voyages to Wineland, of which we have authentic and detailed accounts, are not of later date than the year

* See 'Ruined Cities of Central America,' forming No. 13 of this series.

1012, and that none of the narratives relative to them give evidence of any permanent settlements having been made there, yet allusions to these countries, as to places well known, and with which commercial relations were kept up, are made in several manuscripts of considerably later date, the latest being from the middle of the fourteenth century; and the annals of Greenland record the departure of a Bishop Eric for Wineland in the year 1121. The results of his voyage are not, however, mentioned, nor is it said whether or not he ever reached the place of his destination.

Besides the objects above enumerated, which are supposed to owe their origin to the presence of the Northmen in America, another very remarkable discovery was made in 1845, near Fall River in Massachusetts, in the immediate vicinity of the spot which Professor Raffn in his work designates as the locality in which Karlsefne had taken up his abode. This was the skeleton of a man interred in a sitting posture, his breast being covered with a breastplate of brouze, and his waist encircled with a girdle composed of small bronze tubes, of three inches and a-half in length, strung together, some upon leathern thongs, others upon plaited threads—the metal of the tubes forming a very thin outward covering, moulded over reeds, and the whole bearing a most striking resemblance to girdles of similar construction among the antiquities of Denmark and Iceland. On the earth around the skeleton were strewed a number of white beads of various sizes, of a substance resembling meerschaum, and which had evidently been originally attached to a kind of vestment that seemed made of a fibrous woody substance. The ancient history of America is still involved in so much mystery, that in spite of the striking analogy between these relics of the past and the antiquities of the north of Europe, it is impossible to determine whether they be really the products of early Scandinavian civilisation, or of a civilisation the vestiges of which are spread over the whole length and breadth of the great western continent, but the source of which is still enveloped in darkness. As the Sagas relate the death of several of the Northmen in Wineland, it seems, on the one hand, not quite improbable that the skeleton disinterred in Massachusetts should be the remains of one of these; but the sitting posture is not in accordance with the mode of interment prevalent at that period in Scandinavia and Iceland, whereas bodies interred in this posture have been found in Mexico, Yucatan, and various other parts of America.

It was not, however, only to the south of their own icebound shores that the dauntless and enterprising Greenland settlers ventured upon voyages of discovery; the arctic seas also, the navigation of which is, even in our days of improved nautical science, fraught with so many dangers, were the theatre of their exploits; and here likewise they discovered lands, the glory of the re-discovery of which, after the lapse of nearly five centuries and a-half, is connected with the names of several British officers still living. A letter (the manuscript of which is still extant), written at the end of the thirteenth century by a Greenland priest, by name Haldor, to Arnald, chaplain to Magnus Lagabæter, king of Norway, records a voyage of discovery to the arctic regions of America, undertaken in the year 1266 under the auspices of some ecclesiastics belonging to the bishopric of Gardar in Greenland. It was the custom apparently of the Greenland

settlers to repair during summer to regions north of the Eystri and Vestri-byggd, for the purpose of fishing and hunting. The localities thus visited in summer only, were called Nordsetur, and the principal stations Greipar and Kroksfiardarheidi, the first of which is believed to have been situated south of the island of Disco. The exact position of Kroksfiardarheidi is nowhere explained, but mention is made of its being more northern than Greipar; and as the Runic stone, found in the island of Kingitorsoak, to which allusion has been made in the preceding pages, proves that the Northmen had taken possession of territories so far north as latitude 72° 55′, this renders it probable that some of their summer stations were in this vicinity, and it is believed that Kroksfiard may have been somewhere far in the interior of Baffin's Bay, the name Kroksfiardarheidi signifying barren heights surrounding a bay or inlet. The ecclesiastics above alluded to having, according to the priest Haldor's letter, left Kroksfiardarheidi on their voyage of discovery, with the intention of exploring regions further north than any attained up to that period, were surprised by a storm blowing from the south, and a sudden darkness, and were obliged to let their vessel drift with the wind. When the heavens again cleared up, they discovered many islands, and saw a great number of seals, whales, and bears. They penetrated into the interior part of the gulf in which they found themselves, and to the south, as far as the eye could reach, they saw nothing but icebergs. They judged by certain vestiges that the Skrælings must at one time have inhabited these regions, but the bears prevented them from landing on any of the islands. They were three days returning, and then again discovered traces of the Skrælings on some islands to the south of a mountain called Sniofell (Snow Mountain). On St James's Day they rowed a whole day and night in a southerly direction along Kroksfiardarheidi. They had frost in the night, but the sun was never below the horizon, yet so low at mid-day that when a man lay stretched across a six-oared boat the shadow of the boat's railing on the side on which was the sun fell upon his face. But at midnight the sun was as high as it was in Gardar, when it was at the highest point in north west. Thence the adventurous priests returned to Gardar.

The information here given is unhappily very vague, yet there are some points which enable us to lay down with tolerable certainty which were the regions explored by the Greenland ecclesiastics. According to their description, the gulf or bay which they denominate Kroksfiardarheidi seems to have been so extensive that they required several days to traverse it; further, that they passed from this bay into another gulf or sea, and that they were several days in returning. As regards the first observation of the sun made on St James's Day, it leads to no very certain result, because the depth of the position occupied by the man across whose face fell the shadow of the railing not being given, the degrees of the angle formed by the railing and his face cannot be calculated, and consequently the measure is wanting by which the height of the sun on the given day ought to be determined. If, however, it be admitted, according to probability, that the angle measured 33°, the spot in which the observation was made must have been situated in north latitude 75°. The angle cannot by any means be assumed to have been larger, and cannot, therefore, have indicated a more southern latitude.

The second observation made by the Greenland navigators establishes the fact. On St James's Day, the 25th July, in the thirteenth century, the declination of the sun was = + 17° 32′, the obliquity of the ecliptic was = 23° 32′. Supposing the bishopric of Gardar to have been situated, as is now generally believed, on the north of the bay of Igaliko, consequently in latitude 60° 55′, where the ruins of a large church and several other buildings remain, and indicate the former seat of a colony, the height of the sun in north-west during the summer solstice must in this settlement have been 3° 40′. This is equivalent to the height of the sun at midnight on St James's Day in the parallel of 75° 46′, which falls a little north of Barrow's Straits in the latitude of Wellington Straits. The voyage of discovery of the Greenland priests thus carried them into the same seas as those more carefully explored in the present times by Sir W. Parry, Sir John Ross, Sir James Ross, and several other British navigators.

It will be seen from all we have said, that the discovery of America by the Northmen in the tenth century, however interesting in a historical point of view, remained without any apparent influence on the general course of European events, or, as far as has yet been proved, on the development of civilisation among the natives of the new continent. If, however, the fact of this discovery having remained a secret to the world upwards of seven hundred years, should have taught antiquaries, historians, and philosophers of all classes to be less dogmatical in their assertions, by proving that intercourse between distant nations may have been established on points and at periods not dreamt of in their theories, the records of the voyages of the ancient Scandinavians to America may still prove of service in lifting the veil which to this day hangs over the origin of the nations inhabiting those regions of the New World the existence of which the Spaniards first revealed to Europe.

HERMANN.

I.

THE evening was closing upon an extensive plain that skirted the territory of the Cherusci, in ancient Germany; and on the plain nothing had been visible during the previous day but the shaggy urus, and the almost equally hirsute hunters who urged it in hot pursuit. Now, however, it was covered with a populous encampment, a single glance at which sufficed to indicate the warriors to whom it belonged. Who, indeed, could remain in doubt when he beheld the strong rampart and deep fosse with which it was so securely girdled—the straight and orderly streets and tents by which it was intersected at right angles, and that gave it the aspect of a tranquil city—or the regular noiseless step with which whole masses of the soldiery moved, as if by the impulse of a single spirit, in the performance of their military duties? These, still more than the splendid prætorium of the commander, and the well-known ensigns that surrounded it, announced a Roman camp. It folded within its far-reaching arms the mightiest of many nations—men brimful of life and energy, and prompt at every moment for daring enterprise; while under the leathern coverings of many of these tents the feast was spread, and the jest and song were circulating with the wine-cup. But the sound that rose from such a throng was only like the murmurings of a distant beehive—a buzz and rustle to proclaim that life and energy, though so silent, dwelt there; while the only interruption was an occasional note of the cornet, to summon the officers to the tent of the general, or regulate the changes of the guard.

One man, a solitary speck, moved from out that embattled boundary, and directed his steps along the plain, towards the forest by which it was terminated. He proceeded for some time with a slow, listless pace, until he had left the camp a considerable distance behind him, when he suddenly paused, and looked back, as if to ascertain whether his course was watched. He peered anxiously from side to side, but there was no intervening object to conceal a lurker, and nothing in human form was visible but the long dark column of his own shadow in the already advancing moonlight, which also revealed the distant tents, and clothed them with a peaceful loveliness that was strangely at variance with the purposes they covered. His eye rested upon the military standards of Rome, that glittered over the ridges of the encampment; and as he looked, his teeth were clenched, his nostrils

quivered, and his countenance flashed every moment with a fiercer and wilder emotion in the brightening moonlight. He raised his hands to heaven with the frantic air of one who is about to call down a fearful curse; but the words that struggled for utterance were stifled within his throat, as if he feared that even the winds might hear and reveal them. It was a dreadful yet a magnificent spectacle the emotion of that solitary man, as he gazed upon the camp he had so lately quitted. His stature, compared with that of a Roman, might have been almost termed gigantic; but while his limbs were moulded according to the most ample proportions of heroic beauty, there was a buoyancy in his step, proclaiming that so goodly a form was tenanted by a corresponding spirit; and his face, although wrung with such fierce emotions, was not only faultlessly beautiful, but seemed also to be instinct with those high powers and purposes which the Greek sculptor would have imparted to the features of a demigod. He was completely, and also gorgeously armed, after the fashion of those chosen cavaliers who composed the emperor's life-guards, while the ring upon his finger showed that he possessed the rank of knighthood. But his large, clear, blue eye, his light-brown hair clustering in massive curls upon his broad shoulders, and the brightness of his complexion, indicated that he owed his birth to a colder climate than that of sunny Italy. His birthplace did not long remain a mystery. After he had given full vent to the bitterness of his spirit, a softer emotion succeeded. He threw himself upon the ground, to which he pressed his lips with rapture; in a few moments his eyes were filled with tears, and his voice was broken with sobs, that heaved his manly bosom almost to bursting.

'My fatherland!' he cried, 'my country, my home!—theme of my daily thoughts, haunt of my nightly dreams—hail! all hail, my beautiful, my beloved!' He paused, but it was only because his feelings were too intense for utterance. It was the return of the yearning exile to his long-lost home; the rushing of the child to that maternal bosom in which lies the fountain of life.

Alas that emotions so noble and so holy should ever need to be enjoyed by stealth, or be liable to interruption! But hush! there is a sudden stir in the wood—there is a ringing sound upon the frozen earth from the tread of coming footsteps. The exile started to his feet, and listened with an anxious look. An ancient warrior of the country soon appeared. Upon his head was a rude helmet, fashioned into the form of a vulture with outstretched wings, that nodded terribly as he moved; upon his left arm was a large wooden shield, painted with a diversity of gaudy colours, and in his right hand he bore a spear scantily tipped with iron, but of such formidable weight, that few Roman bucklers could have sustained the shock of its encounter. So grim a figure, issuing from the dark forest, might have been mistaken at such an hour for the guardian genius of these haunts preparing to defend them from foreign intruders. The exile hastened forward to meet him; but no sooner did the old man see the glitter of Roman armour than he poised his spear, and stood ready for combat.

'What!' exclaimed the youth mournfully, 'has Rome then so enthralled the spirit of the noble Sigimer that he can no longer recognise his son?' The venerable warrior threw down his weapon, and rushed into the arms of the speaker. A silence followed—a long deep silence, which was more

eloquent than words between hearts so strong and high. The vulture-headed chief was the first to recover from that conflict of fond affection, for laying his hands upon the young man's shoulders, he gently removed and held him at arm's-length, that he might gaze upon him more perfectly; and while his eyes wandered from feature to feature, and from limb to limb, it was with a scrutiny that seemed to be always becoming more delightful.

'Thou art beautiful, my Hermann,' he at length broke forth; 'thou art very beautiful to thy father's eyes, that have ached for so many years to behold thee. Such were the ancient heroes of the land, who only visit us in our dreams; and thou wilt be as terrible to the foe as the Selecter of the Slain when he rushes from Valhalla to secure his victims. These hands have not twined garlands round the gay altars of the strangers, neither has that free heart been enslaved by their gifts. Spirits of my fathers! look down from your red fields of conflict, and be proud of such a son.'

'Oh my father,' replied the impassioned youth, 'had I forgotten my country, my heart would have ceased to beat! Rome applauded me, her emperor honoured me, the dark eyes of the vain daughters of Italy endeavoured to teach me forgetfulness; but the smallest flower that lurks beneath the snow of my native valleys would have been dearer to me than all the treasures of Augustus. Hark, my father, to the breeze that rustles among the icicles! Its voice is music, and it wafts my spirit to the clouds.'

'And can such a land lie trodden beneath the heel of an enemy?' exclaimed the senior with a tremendous frown, and shaking his spear menacingly towards the Roman camp.

The answer of the other was prefaced with a loud laugh of triumphant scorn. 'They come, my father, to fatten our fields with their blood, and glut the ravens with their limbs. It is for this that I have allured them so far from the banks of the Rhine. Their infatuated leader listens to my words, and watches his birds of augury, and both say to him, "Go forward!"'

A joyous light seemed to flash upon the old man's soul at this intimation. He re-echoed the exulting laugh of his son, and folded him again in his arms, after which both turned their eyes to the far-distant tents, and fixed upon them such looks as two fierce eagles might be supposed to dart upon the victims they had destined for their swoop. And there lay the encampment —a reposing lion, fearless in the confidence of his strength, and knowing that the hunter would either turn aside from his place of slumber, or drop the useless spear at the calm opening of his eyelids.

These astute conspirators withdrew in anxious converse, and were soon lost to sight among the trees of that dark-brown forest which the moon-beams were unable to penetrate: but the vacant space was soon occupied by another pair, who advanced from a different direction. These were a youth and a maiden, both natives of the land. Although their dress was rude and scanty, yet it sufficed to indicate a superior rank among their people, being composed of skins of a finer and more flexible texture, and edged with a richer fur; and the golden chain and embroidered baldric of the young man announced him an ally of the Romans, and one whom they had thought worthy of military distinction. The lady was surpassingly tall; while the polished skin of her limbs, where it was seen uncovered,

was as faultless as the ivory of a statue of Diana, for which statue she might indeed have been mistaken when she stood in an attitude of repose. But a striking charm in her appearance was her long bright hair, which, descending in wavy ringlets to her waist, and half-covering her like a veil, would have made the Roman ladies tear their rich vestments of silk, that had lately become their fashionable attire, for very envy to see their glistening bravery so completely outshone by that garment of nature's workmanship. The young man who accompanied, or rather followed her steps, seemed to urge her with fond and vehement expostulations, but which appeared odious to her ears, for her head was turned away with aversion or contempt.

'Thou carest not for me,' he said; 'thou shunnest, thou hatest me, Thusnelda: the ice-rock is not colder to the winds than thy heart to my intreaties. Bid me do aught that man may dare to obtain thy love. What shall I do to merit it?'

The fair one thus addressed raised the hunting-spear which she carried, and pointed with a stern smile to the Roman camp, but uttered not a word.

'Thusnelda,' he resumed in a more impassioned tone, 'speak to me—speak to me, my beloved! Let me but hear that voice, although it bid me go forth and die, and say what thou wouldst have of the unhappy Rudiger?'

The stern beauty at last vouchsafed to open the rose leaves of her mouth. 'Go,' she said, 'and fire the tents of these destroyers, and I will pledge thee my heart amidst the blaze! Thou startest back! Then bring me the head of a Roman chief in token that thou hast renounced their friendship. Oh these are deeds for men, and Rudiger trembles!' In a tone of bitter irony she thus continued: 'Give me that chain of gold, so unfit for a German warrior; it will better grace the white neck of a maiden in the dance. Give me that belt, so richly embroidered with the workmanship of the strangers; it will serve as a leash to bind my dogs. Thou wilt not?—thou wilt give me nothing? Go, go, and complain no more that Thusnelda has rejected thee!'

'This is but thy wonted bitterness,' repl'ed the youth angrily, 'and thy hatred of all that is Roman. Still thou dost taunt me, because I prefer the lords and teachers of the world to the fierce barbarians by whom I am surrounded. Daughter of Segest, is this well done? Dost thou hate me because I walk in thy father's steps?'

The appeal was in vain, because it was unheard. The beautiful enthusiast, who so lately had breathed slaughter and conflagration, as if these had been her kindred element, was now rapt in one of those prophetic transports by which the women of her land were often inspired when they directed the tribes, like a mountain torrent, against the Roman phalanges. She stood, like one of the Valkeries of her creed, in the act of selecting those who were to die: and while her steady gaze was fixed upon the distant emblems of invasion, her eyes brightened and dilated, as if she beheld more than was pictured in the long lines of reposing tents, or the silence with which they were covered; while her voice, which broke forth in a wild chant, embodying low, but rich and heart-thrilling accents, seemed to be addressed, not to her companion, but the elements by which she was surrounded, or the spirits that hovered upon her ecstatic vision.

'Lift up thy head, my country, to behold the ruin of the spoiler: prepare

thy voice for the welcome of deliverance, and the song of triumph! The clash of shields is deepening, the spears and darts descend like rain amid the thunder; the burning tents are rolled together, and quenched in the blood of their defenders. On—on ye victorious War-men! Yet another effort, and the enemy shall cease to be. And now it is done! The war-horse can no longer bear its master; the golden eagles are low in the dust; and the swords that guarded them lie broken by their side. Can it be that the mighty have thus passed away, like a storm of the night, when the morning sun looks forth in his strength? The vulture flaps his wings over the cold faces of those who brought chains to bind us, and the mighty of Valhalla shout to behold our sacrifices that blaze upon a thousand altars. But can it be, ye prophetic powers who have inspired the vision? Is the chosen one already at hand who is to lead our people to victory?'

'Thusnelda, Thusnelda!'

The call aroused the young prophetess from her trance, but it was only to regard her companion with a look of new interest. 'Rudiger,' she exclaimed with eagerness, 'I have seen the ruin of the foe, and I beheld our countrymen led by one of our own people, whose bright hair was covered with a Roman crest. I strained my eyes to discover his countenance, but in vain; and then came a whisper of Heaven into my heart, that the hour and the hero are both at hand. Friend of the Romans! say that thou art that chosen one—promise me that *thou* wilt obey the voice which the gods themselves have uttered through mine—say but this, and I will love thee; yea, I will worship thee!' She gracefully knelt upon one knee, and clasped her hands in intreaty. 'Say that thou wilt free our people from bondage, and this heart is wholly thine!'

Nothing could be more unresponsive to the high-wrought energy of that beautiful enthusiastic maiden than the stolid look of Rudiger. The appeal which he had heard would have been received by his countrymen as an oracle from Heaven, and ten thousand spears would have been brandished at the summons; but the young man had associated with the Romans just long enough to despise his national creed, without replacing it with that of his instructors, and he was proof to prophecies and omens, whether they might come from Rome or Germany. He therefore tried the effect of reasoning. Vain fool! as if arguments were needed where a deed beyond human hope can only be measured, as well as achieved, by the divine inspiration that prompts it.

'Thusnelda, Thusnelda!' he said, 'this is the dream of madness, not a vision of the gods. *I* oppose the majesty of Rome!—*I* deliver the land from their dominion! As well might the oak shake its branches at the thunderbolt, or the crisp leaves of autumn refuse to move before the whirlwind. Hear the voice of reason, my beloved. The gods of Rome have given the world to the Romans, and what nation may say in reply, "This shall not be?" Let us, then, rear our cottage beneath their protecting shadow, and listen peacefully to the storm. Such is the advice of the wise Segest, who worships the divinity of Augustus, and thus he saves his people from a war that would destroy them.'

A cloud passed over the countenance of the maiden that was lately so bright with inspiration; and with disappointment there was also the bitterness of shame that she should have been so deceived. 'Thou rejectest,'

she replied, 'the cause of thy country, and to me, therefore, thou art nothing. When I dwell beneath the Roman shadow, let its rock fall and crush me! Find for thyself some other mate to join thee in worshipping the oppressor, for I would rather seek the home that is cold and dark, but where all are free. Go, man of a crouching soul, whom neither Heaven can persuade nor honour kindle! The land shall be delivered, though not by thee, and thou shalt only perish in the ruin of the enemy.'

'Daughter of Segest! dost thou despise the wisdom of thy father?'

'A cloud has gathered upon his aged eyes; the gods will disperse it that he may see.'

'And this is a daughter's devotedness! this the piety of Thusnelda! Thy father would remain the friend of Rome, and thou hatest it; he studies to save his people, and thou wouldst give them to ruin; he selected me as thy destined mate, and the guardian of thine honour, when his aged head is laid low, and thou—thou laughest at his will, and despisest the man of his choice. Away from this place of fearful vision! the dark spirits of Hela gather round it. Gaze no longer upon yonder camp: its guardian gods, who keep watch upon its ramparts, frown terribly upon thee. Hence, hence, for to stay is death! Away with me to thy father!'

This burst of angry impatience was only answered by the maiden with a look of withering scorn. Rudiger was almost maddened by that glance; and if the respect of a lover had hitherto made him hesitate, he was now transported beyond its influence. 'I must drag my promised bride,' he fiercely cried, 'from the ruin that threatens her, even though she hatê me; and Segest himself will approve the deed!' He rushed forward to seize her. The point of her spear was instantly at his breast; but the massive ornaments of his military belt arrested it, and the frail weapon fell in splinters to the earth. Already he had secured her arms, and was endeavouring to force her away, but with all the fearlessness and wrath of an insulted German maiden she resisted his efforts, and a furious struggle commenced. The youth was tall and powerful, and his rude grasp had enclosed her, as if she had been some wayward child or rebellious wife, and not a worshipped mistress; but he soon discovered what fearful energies can animate even the female arm when such an indignity has nerved it for resistance. She closed upon him with flashing eyes, and cheeks that glanced like an angry thunder-cloud; she twined within his rude hold, and shook his strong frame to and fro, while shrieks, not of fear, but rage and defiance, with which she followed every effort, pierced the recesses of the wood, and startled the ancient ravens that dozed upon the doddered branches.

Was it a flash of lightning that suddenly broke from the forest?—was it some warrior-deity of the north who had descended to aid so fair a worshipper? With a step as swift as that of a deer, although he was armed in heavy Roman mail, a warrior suddenly broke upon the scene, and at his indignant shout the startled Rudiger recoiled. Wonder and contempt were expressed in the looks of this new-comer, as if he could not credit the reality of such a scene of outrage; and he silently gazed upon Rudiger, whose colour changed from red to ghastly pale in the cold moonlight that revealed his confusion. But the latter endeavoured to conceal his shame under looks of rage, as he hastily turned upon the stranger. 'Away, thou,

meddling fool!' he cried, 'and come not between the lover and his bride!' The stranger raised his eyes to Thusnelda, and her look was enough to assure him: he drew his sword upon the insulter, who madly rushed to the combat. But their weapons had scarcely met, when that of Rudiger was struck from his grasp; and when he sprang forward to grapple with his antagonist, he found himself overmatched in the powerful grip that compressed him. He was raised from the ground, and hurled backward with such force, that he lay stunned and unfitted for further resistance; after which the victor, as if disdaining so unworthy an enemy, turned his whole attention towards her whom he had rescued.

And why should we repeat the conversation that followed, by which two young hearts that glowed with a kindred patriotism gradually learned to beat with one pulse under the inspiration of one and the same bright principle of existence? Have we not seen such hearts, that though parted by lands and seas, have for the first time met, not as strangers, but as friends?—have felt in an hour as if years had passed over their mutual intercourse—and been gladdened with the delightful consciousness, that thus to love was neither a deed of rashness nor a subject of blame? Thus it was with the noble pair who walked, at first at a brief distance from each other, but afterwards side by side, and finally hand in hand into the forest, towards the cottage of Segest. That warrior-youth, so disguised in Roman panoply, was like a young poet who for the first time has found his Muse; or like a patriot, who beholds impersonated the presiding Genius of his native land to animate and direct him. He talked of the imperial city in which his spirit had been imprisoned so long, and how he had pined amidst its grandeur for his own northern land, over whose limitless wilds he might pass like the whirlwind, and feel that he was free indeed; he talked of the gallant children whom their country nursed within her heroic bosom, and of the noble deeds which they might be taught to achieve; and while he thus spoke, it was in language such as heroes use when they describe the deeds of heroes. And then, too, the tones of his voice were so rich and varied—so deep in their energy, and so mournfully sweet in their tenderness. Thusnelda, Thusnelda! how soon hast thou forgotten thy baffled suitor and his insult! The words of Hermann are like music from heaven, and thy bright eye grows brighter as it steals with sidelong glances over his heroic form. They entered the dark edge of the forest, and disappeared, so that nothing but the motionless person of the baffled Rudiger occupied the scene. Sensation returned to him, and it came with the remembrance of defeat, and the desire of vengeance. He rose from the ground, resumed his useless sword; and with fear and hatred in his heart, and the air of some ignoble cur employed to track the game which it is unable to encounter and pull down, he cautiously followed in the path of his conqueror.

II.

Days and weeks had elapsed since the Romans pitched their camp, and all as yet had seemed to intimate that it reposed upon a friendly soil. The soldiers had burnished their arms until they shone like polished mirrors from lack of more warlike occupation; and they had mingled in social

sport or conversation with the natives, who thronged in peaceful fashion to the military market-place, where they exchanged the produce of the chase, or rude articles of home manufacture, for the gold or trinkets of Italy. Nothing, in short, could be more unlike the condition of an invading army; and it appeared as if these gallant legions were to return to their homes upon the banks of the Rhine with the new inscription engraven upon their shields—*Germania pacata.*

The sun of the newly-commencing spring was descending, the crowds of friendly natives had retired, and the cares of the soldiers were chiefly occupied in preparations for supper. Two centurions at this instant were standing a few paces in advance of the principal outpost, apparently employed on some military duty, and engaged in conversation. One of them was an ancient warrior, whose countenance under the suns of Parthia and the frosts of Germany had acquired the hue and almost the lustre of bronze, while his wrinkled forehead was bald from the constant pressure of the helmet. The other centurion was a mere youth; and as if his armour had been an idle burthen, as much of it was laid aside as could be dispensed with according to the regulations of the camp. In other respects there was no want of care in the arrangements of his person, for his locks were crisped according to the latest fashion of the Roman courtiers, and his silken, well-trimmed beard was curled and perfumed; while the ornaments that dangled gracefully from his neck and waist announced an ambition for more gentle conquests than those that were to be achieved by the sword. After the two had eyed the setting sun and looked carefully along the plain, as if to ascertain that all was tranquil, the younger, striking his vine-rod, which he carried as the badge of his rank, upon the ground with a gesture of impatience, thus broke forth to his companion—'By the bright smile of Venus, this peace is intolerable! Was it for this that I left the gay suppers of Sempronia and the merry rambles to Tiburtinus? Peer out, peer out, most sage Septimuleius, and tell me if your old experience can descry any promise of warfare? I would rather die at once under the stones and bludgeons of the Cyclops who inhabit this hideous country than expire by inches, as I am likely to do, from very spleen and weariness.'

'Your wish will be granted, and that speedily, Lucius,' replied his more thoughtful fellow-officer, 'unless my experience, which has been gathered in many lands, and through a long military service, is failing me at last. It tells me that this calm is delusive, and that it will soon burst in tempest or earthquake.'

'Mehercle!—but from what tokens do you derive this grim augury?'

'From the gentle demeanour and friendly protestations of this people, upon which our army is so confident. Are such feelings, is such a state congenial to barbarians? Will the fierce Germans, so renowned for ages, thus succumb without a blow?'

'The burly, big-boned, gallant churls!—I hope they will not,' cried the youth sportively: 'for I long for the excitement of victory, and the fair-haired, blue-eyed *spolia opima.* Ah, these charming giantesses!—they are only to be won, like their predecessors the Amazons, by hard blows, and not by blandishments.'

'A truce to such frothy impertinence!' exclaimed the senior gruffly: 'Does the hour or the subject permit such jesting?'

'Is it not better,' replied the laughing youth, 'than the grave comedy that has been playing these several weeks, in which our general has been acting the lawyer and judge? So favour me Mavortius! his tent looks more like the paltry tribunal of a city prætor than a warlike prætorium. Faugh! how it reminds me of the clown-trodden Forum—its grave legal decisions about greens, oil, and honey, and its furious brawls and speeches about some half-dozen of sesterces!'

'Thou speakest, Lucius, more wisely than thou art aware,' said the other; 'and thou hast mentioned another ground of suspicion. The natives, indeed, throng daily to our tribunal, and submit their contentions to the award of the general; and Varus, thinking that the arts of peace will be all-sufficient, exclaims in a sportive mood, "*Cedunt arma togæ!*" But he will soon find that the cuirass, and not the gown, is needed here. This gratuitous submission is itself a proof that treachery is at work. Even these contentions, which the people submit to our arbitration, are not the genuine quarrels of barbarians. They have wholly the appearance of preconcerted artifice, to lull us into security, and smooth our march to destruction.'

'By all the gods you startle me! Do you think, then, that to-morrow we commence our last march?'

'These pathless forests into which we shall enter,' replied Septimuleius gloomily, 'are the threshold of Hades, upon which no reversed footprint has ever been marked; and we march to the shades under the leading of a Mercury who will securely consign us to the keeping of the King of Shadows. Oh he is cunning, and eloquent, and beautiful, like the god who leads the dead to their destination, when they listen to his soothing words until they forget the purpose of their journey!'

'Do you speak of the chief favourite of our commander—of the German Arminius?'

'Yea, of that serpent Arminius, who has so fascinated the brain of the prudent Quintilius Varus.'

'What! a youth, a mere stripling, and a barbarian to boot, although his fine figure turned the heads of half the ladies of Rome! You dream! or do you envy him, Septimuleius?'

'I tell you that there is more under the bright locks of that stripling than the furrowed brows of our wisest officers. He is the master-spirit of this strange tranquillity of his countrymen, and to-morrow we march, we know not whither, under his guidance, to receive the submission of his father's people—the Cherusci. But into what trackless woods will he conduct us? Among what ambushes may we be entangled, or in what morass shall we be swallowed up? To none but the gods of Rome should such a responsibility be intrusted. Oh for the leading of the wise and heroic Drusus instead of that of Quintilius Varus!'

The young officer was thoughtful for a moment in consequence of these ominous surmises, the plausibility of which he was unable to gainsay; but he was neither of an age nor temper to think long upon such a disagreeable topic. Let the general look to it. As for himself, it was enough that he discharged his own duties faithfully, whether to advance or retreat. Besides, might not the old man, whose services had been but churlishly rewarded, be a camp critic and a grumbler? Such characters, who had the happy

tact to discover that all was wrong, were rife in the Roman army. It was with some satisfaction, therefore, that he found further dialogue cut short by a deep bellowing from the forest, that, to unpractised ears, would have sounded like the roar of savage animals, but which seemed to the officers nothing more than an expected signal.

'It is the German chiefs,' exclaimed the laughing Lucius, from whose mind the warnings of his friend had already vanished; 'it is the sons of the whirlwind and the tempest, who have been invited to our general's parting banquet; and I almost weep to think how little of our good wine will be left when these gigantic wine-skins have been filled. Evöe, god of the joyous vine! what pity that thou canst not plant thy treasures in this sterile soil, to refine its monsters into men! See, Septimuleius, with what strides they advance, while each man carries upon his shoulder a gnarled pine-tree, which he calls a spear! Ha—ha—ha! when the feasting has ended, I laugh to think how they will roll in their departure, like a heavy-laden fleet contending with a storm.'

As he spoke, the train to which he alluded advanced. In the front of the procession went musicians, trumpeting upon the huge horns of the urus, by which their approach had been signalled, and after them came the principal personages of the neighbouring tribes, who were invited to seal their amity to Rome at the parting banquet of the general. The rear was closed by the military attendants of the chiefs, men whose stature, appearance, and weapons, in some measure justified the ludicrous comments of the younger centurion. The tremendous blast of the horns was answered by a rich symphony of wind instruments from the camp; and a guard of legionaries, under the command of Septimuleius and Lucius, advanced to receive the guests with fitting honour, and conduct them to the prætorium.

And let us enter the prætorium in their company. The evening was devoted to feasting and hilarity; and Varus, who thought that all resistance was at an end, lavished upon his honoured but barbarian visitors the excess of Italian politeness. The wonted prayers were uttered, the libations were poured out, and the company addressed themselves to the feast with military appetites. The viands chiefly consisted of huge boars roasted whole, after the most approved recipes of Roman cookery, and stuffed with smaller game, which were themselves stuffed in turn with little birds and sweet herbs: these were corroborated by rich draughts of Greek and Italian wines; and the commander, gracefully apologising for the rough comforts of a soldier's tent, endeavoured to enhance the relish of these dainties by every expression of hospitable courtesy and kindness which the Augustan vocabulary could furnish. Varus was a general, according to the testimony of the great annalist of that age, such as Rome was now in the frequent habit of inflicting upon the conquered provinces. Of a noble family, which had been impoverished during the wars of the second triumvirate, he had been taught, in common with many of the Roman nobility, to anticipate office as a never-failing source of aggrandisement; and when he was invested with the chief command in Syria, he regarded this province as a sort of patrimony, from which he might fill his empty coffers without scruple. Accordingly, although he entered his government poor, he left it a rich man, and laden with the curses of its pillaged inhabitants. In the meantime, as his military qualities had been untried, they remained

unquestioned; and when a commander for Germany was required—one who to the tactics of the soldier could add the conciliatory arts of the politician—Quintilius Varus was announced as the happy individual who possessed this rare combination. It was thought; from the tranquillity of his administration in Syria, that he possessed in an eminent degree the talents of a ruler, and that these, still more than warlike measures, would tame the hitherto indomitable Germans. Such was the view adopted even by Augustus himself; and to the Rhine, accordingly, the new commander was sent, from which he commenced his march into the interior under auspices which have been already explained. And how, indeed, could he be suspicious of latent danger? The fierce barbarians, hitherto so reckless of the Roman terrors, had submitted their quarrels to his decision, as if he had been a second Numa or Tresmegistus; and the more remote tribes, who had invited his approach, were ready to hail it as the pledge of peace and civilisation. Besides, had he not in his right hand the young and gallant Arminius—one whom his countrymen already venerated like a divinity, and through whom, therefore, he could wield at will the feelings and purposes of Germany? These thoughts made him jocund as his eye glanced complacently, at one time over his officers who reclined in the order of their rank, and at another over the German chieftains who feasted at the board. Even the rude simplicity of the latter gave a zest to the entertainment, for it excited mirth to observe the wonderment with which they regarded the native productions of their own forests, so marvellously heightened or disguised by the skill of the Roman cook; and, above all, to witness the rock-like firmness of brain with which they repeatedly drained the wine-cup. But even rocks may be overthrown by a succession of billows; and as these hirsute revellers warmed into jollity, their eyes twinkled, their huge moustaches curled upwards, they repeatedly stretched their brawny arms across the tables to grasp the right hands of the centurions, and broke forth into vociferous praises of Augustus, his wise government, his brave legions, and his good wines; and finally, they sung such tremendous snatches of their native songs as made the images of the Lares tremble upon the board. And amidst the din, the laughter, and rough military jesting, none was so happy as Varus himself, who, from his central position at the banquet, encouraged the flow of wine among the barbarians, and smiled upon their boisterous glee. Could insincerity lodge in the hearts of such men? No; it was impossible. And as he gave himself wholly up to the enjoyment of the hour, he addressed himself from time to time to the chiefs with sentences of their own language, which he had conned for the occasion, while the applause which they roared in return evinced that his conciliatory policy was not in vain.

But there was one of the German guests to whom wine had no temptation, and in whose eyes the hilarity of the revel had no charm. This was Segest, the chief of the warlike Catti, and father of Thusnelda. The arrival of Hermann in his native country, and his subsequent encounter with Rudiger, had disconcerted all the old man's plans of a family alliance with the latter; and he learned, accordingly, to hate and watch the person by whom his views had been traversed. He had therefore tracked the movements of the young hero, until he had in some measure detected the nature of that plot which was conducted with such secrecy and success.

Elated with his discoveries, he resolved to divulge all he had learned; and by thus doing, he hoped to deter his country from a disastrous rebellion and hopeless war, and at the same time to crush an enemy whom he hated. Under these motives he had passed the untasted goblet with a self-denial that was alarming in a German; and when he now saw the condition of his countrymen, he judged that the fit moment had arrived. Turning, therefore, to Varus, the old chief exclaimed, with a smile of suspicious meaning, 'Why miss we at the hospitable board the man of two tongues and double aspect—the first of Roman allies, and the best beloved of his countrymen? Where tarries the Arminius of Rome, the Hermann of Germany, when so many friends of either party are assembled?'

'We commence our march to-morrow,' replied Varus, 'under the faithful guidance of Arminius; and to-night he explores the passes, to ascertain that our route shall be in safety.'

'I have been so long the friend of Rome,' rejoined the old chief drily, 'that I have learned some portion of its history. Crassus, they tell me, marched into Parthia, and perished with all his army. What was the name of that cunning Parthian who became his guide, and led him to the field of Carrhæ?'

'You dare not insinuate that Arminius is a traitor!' cried the general, starting up angrily.

'*That* the result alone can show,' replied the other: 'if he led the Roman army to destruction, what German would dare to call it treason?'

For a moment several of the Romans were startled; a gleam of lightning had revealed the precipice upon the brink of which they were standing. Segest perceived the effect of his warning, and resolved to deepen the impression. 'What powerful pledge,' he continued, 'have you received from my countryman, that can weigh against the hazard of your whole army? Oh, Varus, and ye noble Romans,' he added with emotion, as he saw that they remained silent, 'prosecute no further this ominous enterprise that can only end in your destruction. Rather deepen the fosse, and strengthen the ramparts of your camp; or if you march, let it be back to your cantonments on the Rhine, for there alone your safety is insured.'

'And what greater evil could we endure,' cried Varus, 'after the most ruinous defeat? But the honoured of Rome, the trusted of the emperor, can be no traitor. Has he not already conciliated the neighbouring tribes? Have we not by his mediation accomplished all that a series of victories could have done? There is no treason save that which would persuade us to retreat from such a career without a blow. You have learned, you tell us, somewhat of our history; but have you ever heard that a Roman army so left the field before an enemy had appeared? Go to, old man; your admonition may be honest, but, by the majesty of Augustus, it sounds suspiciously! When the inconceivable calamity you dream of has arrived, and when our legions are reduced to a few cohorts, it will then be time to retire behind the Rhine, and seek the protection of our cities.'

'Man doomed to destruction!' cried Segest fervently, and starting to his feet, 'listen to one who has continued so fast a friend to Rome that almost every German has become his foe. Go forward, and the ruin thou seemest shall be so complete, that not even the few cohorts thou speakest of shall survive. Away in the far distance the tribes are silently

mustering, and they only wait until thou hast entered the snare. And who but Hermann has been the author of so unheard-of a union among our people? To the dauntless boldness of his own race he adds the wisdom and subtle arts of Italy; and like a viewless spirit his path has been through every tribe, and his whisper in every ear, while the chiefs have become his willing vassals. If thou wilt yet onward, then begin by throwing the conspirator and the leaders of Germany into chains, so that the hopes of the rebellious may be frustrated, and afterwards thou shalt have leisure to detect and punish the guilty. Up, then! seize and bind; and let these withered arms be the first to receive thy fetters! I will endure bondage as frankly as I have suffered wounds for the safety of my people and the welfare of my country.'

When the stern old chief had ended his strange request, a voice of earnest intreaty was heard from one of the centurions: 'Oh, Varus, there is truth in his words; therefore dismiss them not without inquiry!' All eyes were turned for a moment towards the speaker, who was the veteran Septimulcius.

The words of Segest, although they so obviously compromised the safety of the German guests, had produced upon these unsophisticated lovers of good cheer no impression whatever. In fact they were fast verging towards that oblivion of the past, and insensibility to the future, which their deep potations were so calculated to inspire—or, to speak without periphrasis, they were drunk, as well as imperfectly skilled in Latin, so that when their countryman spoke of treason, their broad, open countenances betrayed no traces of conscious guilt, or even of apprehension. Fortunately also for their cause, one of their number was an inveterate speech-maker; and no sooner did he hear the address of Segest, than his wonted love of haranguing came mightily upon him, maugre the reeling of his faculties. He rose, therefore, from his couch, and after several attempts to steady himself, he threw his arm into an oratorical attitude, striking down at unawares with the flourish a slave who waited at his elbow; and fixing his lack-lustre eyes upon Segest, he thus stammered forth: 'Dost thou talk of duplicity?—Man of two faces and double form, I behold no traitor but thyself! Look at him, Varus, and ye assembled Romans, and say if he is fit to be trusted? Even now he flits hither and thither like—like the winter streams of light upon our midnight skies. Stand still, and confront me steadily if thou canst! But no, he has fled, and my eyes can find him no longer! Ho, ho! my words have extinguished the eloquent Segest!'

A roar of laughter, and mad shouts of applause, especially from the younger officers, crowned the efforts of the tipsy orator, who was now so thoroughly obfuscated that a new hallucination seized him. He thought, as the gay assembly and the rich furniture of the tent flitted before his vision, and the sounds of merriment rang in his ears, that he had been suddenly dismissed from the world into the northern paradise of battles and revelry. Turning, therefore, to Varus with a look of drunken solemnity, he suddenly exclaimed, 'Mighty Odin, strong whirlwind of battle, and father of the slain! I have ascended from the cleaving of shields and the whistling of spears, while crowds of heroes were falling around me. But I come not without revenge. Receive, then, my humble offering, and

smile upon the giver. It is the skull of a warrior with whom I grappled to the death! Behold, even yet it drops blood, although it shines like the gold of the strangers in the light of thy hall!'—and with these words he presented the spacious drinking-cup which he had so often emptied during the banquet.

This was too much even for the gravest, and a universal peal of mirth shook the drapery of the tent, and startled the sentinels at the entrance. In the meantime the exhausted speaker relapsed into his seat, and seemed to ponder upon his fancied bliss with a bewildered look. Varus turned to Segest, who had been regarding the interruption and its effects with unutterable disdain, and said to him, 'Behold, Segest, how the matter ends, as it ought to do—in mirth and jest. If there be truth in wine, such men cannot be false—at least they can form no plot that would be too deep for us to fathom. Resume, then, thy place at the board, and give these idle fears to the winds.'

'It may not be,' replied the chieftain mournfully: 'I return to my home and my people. There I shall celebrate the obsequies of thee and thy army, and prepare to resist the conqueror.' These words were spoken in a voice unheard by any but Varus, but in spite of their impressiveness they produced no effect upon the general. Casting a parting look upon the assembly, as men whom he should never again behold, and covering his face with his shaggy cloak to conceal his grief, the old man strode away, and was soon lost in the distant obscurity.

III.

The warning of Segest had been in vain. On the morning that succeeded the banquet the tents were struck, the beasts of burthen were laden, and the Roman army, consisting of three veteran legions and six cohorts, besides several large bodies of provincial Gauls and auxiliary Germans, composing in all a force of nearly 50,000 men, was put in motion. With such a host how often had Rome overswept whole kingdoms, and scattered the bravest and best-appointed armies! and what danger, then, could be apprehended from the naked and undisciplined hordes of Germany? Thus at least reasoned Varus, so that he continued to march into the interior without hesitation, and advance far beyond the limits of any former Roman commander. And still it was marvellous the harmony that continued between the general and his guide: one soul seemed to animate them in the movements of the army, and Varus reaped the fruits of such a confidence by the ready submission of the natives upon his line of march. How, indeed, could it be otherwise, when Hermann himself was so indefatigable in procuring this submission? He came and went between the Romans and his countrymen with an incessant activity; and besides his own personal labours, he employed numerous emissaries—men whom he had carefully selected, and who travelled far and near upon errands of pacification. It was true, indeed, that the more remote and warlike tribes, towards whom the Romans were approaching, had taken up arms to resist the invasion; but the forecast of Hermann had anticipated their purpose, and numerous detachments had been sent out to reduce the insurgents.

Go on, happy and victorious Varus!—eclipse all thy predecessors have done, by erecting trophies in regions which they never visited!

While such was the state of affairs at the close of a day's march into the territories of the Cherusci, and where the army had encamped for the night, let us once more turn to that youth of fearful purposes upon whose fidelity so much reposed. Since we last saw him in communion with the Vulture-head, the close of winter had dissolved under the rays of the early spring; and the ice-winds were exchanged for gentle gales that whispered nothing but peace; while the forest birds began to sing their first love-notes, that imparted tenderness to the universal welcome. It was in such a night that Hermann again met with the beautiful Thusnelda in the depths of a wood, and under the embowering branches of an ancient oak. But they did not now meet as strangers; and it seemed as if many a happy meeting had been held between them since their first momentous interview. But what meant that wondrous change upon the maiden's countenance—a change more complete than that which the season itself had undergone? The sternness had vanished from her eloquent brow, and the proud flash of disdain and anger from her looks; and in her eye, and voice, and cheek, there now dwelt nothing but the glow of love and tenderness, while she meekly rested her arm upon the shoulder of her beloved, and watched with silent fondness the changes of his expressive features. As for him, a higher emotion than even that of love seemed for the moment to transport him; and when he spoke, it was in bursts of triumph, the utterances of a pent-up heart, rather than a spontaneous communication.

'Soil of my country, and ye surrounding elements, rejoice; ye shall still give life and gladness to the free! Gods of my country, look down, for you shall behold the ruin of the oppressor! The victim is enclosed, and only waits to be dragged to the altar! Ho, Germany! gird thee for the sacrifice, and let the axe be bright and sharp! Hearest thou not the answer, Thusnelda? There are voices from earth and heaven; there are voices from all the winds; there are song-like notes from the homes of the living, and joyous murmurs from the dwellings of the dead; and they reply in triumphant accents, "We come—behold we come!"'

'Hermann—my beloved Hermann!'

The voice was as soft as the murmur of the wind when it scarcely stirs the leaf of the aspen; but the thunder itself could not have been more effectual to rouse the hero from his trance. He looked down with a smile of delight, and gathered the fond maiden into his bosom, while she exclaimed with a burst of confiding tenderness, 'Hermann, thou art dear, thou art very dear to me, because thou so lovest thy country!'

'And thou art very dear to me, Thusnelda, because thou art the living spirit of my country. In what land or among what people could I so find the soul of devoted womanhood? I have therefore held counsel with thee in preference to the gray heads of our experienced senators, and thy words spoke courage and hope when the voices of the brave would have faltered. My heart was breaking while I was compelled to smile upon our tyrants, but thou badest me endure; and when our people stood aloof from me, or doubted, with thee there was neither doubt nor fear. Noble creature! When men shall speak in future days of the deliverance of Germany, the deed shall be coupled with thy name.'

'I have obtained all that a daughter of our land could desire,' replied that beautiful one to his impassioned eulogium; 'and yet, in this hour of my triumph, I feel not wholly happy. Blame me not, my beloved Hermann. I think of my father, who has renounced me; and of my people, to whom I have become an alien.'

'Thou hast found a new father in my parent Sigimer, and a new people in our gallant Cherusci, who love thee as a sister. And hast thou found nothing else, thou dear complainer, to comfort thee?' and with that he laughed in the joyousness of a heart that revels in the completeness of its happiness.

'Hermann, my brave one!' she replied in accents that would have won the timid birds from their branches, 'let us forego this theme for one that is still dearer. How prospers the cause of freedom?'

'All has succeeded beyond our fondest dream, Thusnelda. Even the gods of Rome have leagued with us, and at the command of their oracles Varus has marched into our toils. To-morrow he encamps at Teutoburg; and there, if our people but prove true to their country, his army shall find a grave. Ha! ha! ha!—the distant tribes have risen at my call; and the troops that have been sent to quell them shall never return to bury the bones of their comrades. To-morrow, Thusnelda—to-morrow Germany is free; and Hermann—what matters it of him after he shall have led his country to freedom? In the meantime, shelter thee, my love, beneath the roof of my father. There thou canst either welcome my successful return or bewail my glorious departure.'

'I shall never bewail thy departure, Hermann: thy death or thy triumph shall equally be mine.'

'Thusnelda!'——

'Hast thou yet to learn the duty of a German maiden? Go—go! my Hermann thinks of the timid daughters of Italy. Thou shalt find me in the field; and where the spirit of our people fails, there shall I be, to turn them back. And thinkest thou that I could survive thy death, as well as the ruin of our liberties? Thy danger shall be my danger, and where thou fallest there I will die!'

'Then die with him even now!' cried a terrible voice that shook the forest leaves; and immediately a dart, discharged with a vigorous arm, whizzed between the lovers, and slightly grazed the shoulder of Hermann. With the rapidity of lightning the youth gave chase to the treacherous assailant, at one time directed by the sound of flying feet, and at another by the shadowy form of the fugitive, as he emerged from the deep forest into the opening plain. A desperate race for life and death was maintained, in which Hermann continued to gain upon his enemy: at last he poised his lance, and hurled it with such good aim, that the leg of the other was transfixed, so that he fell heavily in the midst of his career. Hermann planted his foot upon the recreant's breast, and drew his sword, but forbore to strike, for he saw that it was the twice-baffled Rudiger. 'Brave warrior of moonlight deeds!' cried the hero with a reproachful sneer, 'what wouldst thou again with Hermann? Thou hast heard my words?—it is well: go, and reveal them when they are too late to profit, so that our enemies may feel the bitterness of death before it comes. This at least they owe to injured Germany.' He spurned the traitor as he spoke, and

turned away; while Rudiger, groaning under his wound, rose from the ground, and slowly dragged himself along the plain.

Three hours have elapsed since that encounter, and the scene and the actors have changed. In one of the recesses of that mighty forest, upon the edge of which the lovers had held their interview, a meeting of the wisest and bravest of the Germans had been convoked, to deliberate upon the welfare of their fatherland; and the appointed hour was that of midnight, that even the sleeping birds might not hear and carry the tidings to the enemy.

That place of meeting was even more gloomy than the midnight hour that overshadowed it. It was a large, open space in the form of an amphitheatre; and having been formerly cleared of trees by the simple operation of fire, the blackened stumps that still remained had something unearthly in their appearance under the faint glimmering of the moon. The spot had evidently been consecrated to religious purposes, as well as those of political convocation; and its gloom fitly accorded with those dismal and mysterious rites which characterised the worship of Odin. Altars constructed of turf raised their heads upon the skirts of the area, and were over-arched by huge branches of ancient trees, the trunks of which were garnished with human skulls, the ghastly relics of those captives who had been immolated to the god of battles; and round the altars, which were even now consuming fearful offerings, bands of priests walked in choral procession, their wild forms invested with almost supernatural terrors in the glare of the sacrificial flames; while in songs that rivalled the roar of the tempest they invoked their slaughter-breathing deity, and doomed their foes to destruction. The forest itself seemed to be instinct with life, for there was an incessant rustling among the trees and bushes, as chief after chief poured in from every direction, accompanied by his attendants, and took his place in the arena. The fires of the altars were increased, until every countenance was distinctly revealed, and all were hushed into silence, awaiting the commencement of deliberation.

But were these the men, alas! to accomplish the ruin of a Roman army? There was not a breastplate, and scarcely a helmet or a sword, among so many warlike chieftains, although they had repaired to the meeting, as was their wont, in full military equipment. Their large shields, painted with every variety of gay colours, and composed of thin boards loosely joined together, or of osier twigs interwoven like a basket, would prove but a frail defence against the strong, broad-bladed Roman falchion; and their heavy *frams*, so sparingly tipped with iron, or the handful of light darts with which they were provided for distant combat, were miserable appointments compared with the slings, arrows, and javelins, as well as the tremendous engines of their enemies. The attendant warriors who accompanied the chiefs were still more scantily furnished; for their principal weapon was a massive club hardened by fire, or a long spear headed with flint. Their attire was in character with their arms, consisting only of a short mantle, and many were wholly naked. But gallant hearts beat proudly within these uncovered bosoms, and the naked freeborn limbs that could so cheerfully brave the blasts of winter would never submit to be shackled, whether by the chains or the ornaments of Rome. And who shall estimate the grandeur and importance of that midnight deliberation? The destinies of

the world itself depended upon it. Shall Rome become the all-dominant, by adding Germany to her possessions, after which no spot shall remain upon earth for the resting-place of freedom and the refuge of human hope? Or shall these warriors rush to the field, and thus devote themselves for the enfranchisement and regeneration of the human race? Let but the still unconquered North succumb, and from what quarter shall the deliverance of mankind come? Perchance from the East, when the appointed ages have revolved, and when the fierce Arab shall introduce a less heroic spirit and a lower capacity for improvement.

It would have been worth whole years of common life to look, though but for a brief space, upon these the fathers and founders of a new world. The place in which they met, although so dark and wild, was from thenceforth to be holy ground to all the nations of Europe. The soil rose gently in every direction from the centre, the innermost circle being occupied by the chiefs, while ring above ring sat their followers in thousands, who took place according to seniority or military reputation; but all these had a deliberative voice, for all were equally free, and if they were the vassals of leaders, it was only by a willing homage to the highest in wisdom and valour. The recesses of Germany had sent forth their noblest upon this important occasion, and conspicuous among them might be seen the vulture-crest of Sigimer, and the dark, lowering countenance of Inguiomar, his brother. But of all the warriors assembled there, none was so noble or so beautiful as Hermann. The youthful chief had now thrown aside his Roman attire and weapons; but still he towered pre-eminent in majesty and strength above all the congregated multitudes, while his bright visage bore the impress of a higher wisdom and more commanding energy than could be found among those who had grown gray in command—so that all eyes were naturally turned upon him, as the chief object of regard. When all were silent, the priest of Odin stepped into the vacant space in the centre, and exclaimed with a trumpet-like voice, 'Son of Sigimer, we have met according to thy wish: it is thine to tell us wherefore we are assembled.'

Hermann rose at the appeal, and amidst the breathless attention of the multitude he thus replied, 'Sons of the War-men, who fought against the Romans—children of those who live for ever in our songs—would you die like them to be so celebrated? or would you rather descend to the grave unsung, and leave no name for your children to remember? To whom do I speak? My words shall be full of danger to those who hear them, and therefore they should only be uttered to those who prefer death to dishonour. Dare you, then, to listen, or shall I close my lips, and spare you?'

At this appeal the whole multitude started up as one man, and with a simultaneous shout, that made the firmament tremble, they exclaimed, 'Speak, for we dare to die!' At the same instant every right hand was raised to brandish a weapon, every shield resounded with loud clashing; and during that wild burst of enthusiasm, the agitated crowds, in the lurid light of the altars, resembled the giants broken loose from the cavern of Lok, and preparing to ascend and storm the regions of Valhalla, rather than mortal men assembled for a deed of earthly enterprise.

When silence had been again restored, the young warrior harangued the

people in a torrent of vehement, overwhelming eloquence. He unfolded to them the subtle stratagems by which he had led the Romans and their infatuated commander to the place where their destruction was certain. The losers might complain of it as fraud, and demand an open warfare; but this was only the demand of the strong, conscious of superiority, and sure of victory. An open warfare? Yes; but then let it be an equal warfare also, where weapon is matched with weapon as well as man with man. But when the Romans advanced against them, clothed in steel, and bristling with warlike engines, it was for naked Germans to avail themselves of wiles where native valour must be unavailing, and encounter superior arms and discipline with superior craft and wisdom. And had not the opportunity arrived? The enemy were enclosed by thick forests, where their serried ranks would be broken asunder and entangled among treacherous marshes, in which their heavy armour would be a burthen, not a defence; while the light-footed Germans would be able to advance like the winds upon crowded and helpless masses, while not a stone could fall, or a blow be dealt in vain. Would they then delay? Would they hesitate to strike where victory was so certain? Let them—and the very women would snatch up the arms of their recreant husbands and lovers, and accomplish a victory which even women could achieve. He then unfolded a panoramic view to the excited imaginations of his auditors of the glorious results by which the ruin of their enemies would be crowned. Rome, dismayed by the loss of such an army, would pause before she hazarded a similar defeat; and future invaders would tremble to approach their forests, lest they also should perish as Varus had perished. And what tribe, throughout the wide regions of the north, would yield to despair, or succumb to an enemy, after the memory of such a success? Let them rise, then, and deliver their beloved country—not for a day, or a year, but for ages to come, and be celebrated as the glory and example of their latest posterity!

Such were the arguments of Hermann; and they were embodied in language so fervid, and with appeals so heart-stirring, that every bosom seemed to be animated with his own resistless spirit. The listeners brandished their weapons with a wilder energy than before; they threw themselves forward; they gazed with straining eyeballs, teeth clenched, and dishevelled locks that seemed to glow with life; and they raised a shout, the terrible charging shout of battle, with which they had been wont to burst upon the iron ranks of the Romans. The priests who stood beside the altars not only caught, but confirmed the enthusiasm, for they immediately commenced the inspiring war-hymn with which they were wont to make their followers laugh at danger; and in strong, deep voices that accorded with their theme, they described the happiness of those who rushed to heaven in the whirlwind from the red field on which they had fallen. Valhalla would open its gates to receive them, and its sacred thresholds would outshine the flowers of sunny lands, as they impressed them with the blood of their footsteps. And oh the rapture of careering upon heavenly steeds, as fleet and strong as the tempest, and plunging amidst the cleaving of shields and the maddening whirl of the conflict!—only to be followed at evening by the celestial banquet, where the flesh of the mighty boar was constantly renewed, and the brimming ale-cup could

never be exhausted. And now the consultation was done, the decision was adopted. Every eye was impatiently turned heavenward, to chide the night that was so long in passing away, and every heart only yearned for the moment that would bring them in front of the foe.

The chief priest of Odin again raised his head, and made a signal to address the multitude, upon which the uproar was instantly hushed. This ancient man appeared as if he scarcely regarded the throng, or the business with which they were occupied: he was like one whose communings are with the dead, or with supernatural beings, compared with which the realities around him were of trivial import; and when he deigned to raise his cold, stony look, it was but for a moment, and with a heedless or impatient notice. But all were only the more willing to concede authority to one who seemed so superior to the love of rule, and thus he was enabled with a brief word, or even a mute signal, to control the tide of popular feeling, and direct its energies. 'Whom choose ye for your leader in this sacred cause?' he exclaimed in tones of searching power; and only one name was universally pealed in reply—a name that was ever afterwards of such resistless power in animating the ranks of the War-men, and deepening the swell of battle. 'Hermann! Hermann!—we follow no leader but Hermann!' As soon as the choice was expressed, a band of young Cheruscan warriors hurried into the centre of the circle, and exulting in the honour conferred on the hero of their tribe, they placed him upon a shield, which they raised aloft, and showed him to the whole assembly. Having invested him by this ceremony with the chief command, the venerable Sigimer, secretly shedding tears of gladness, his brother Inguiomar, and all the chiefs of name, gathered round, and bound themselves in brief but energetic terms to follow their newly-appointed leader to the death; after which all the other warriors followed the example, and joyfully pledged their obedience.

When this important election was over, the priest exclaimed, 'Let us solemnly consult the gods, to know if we shall go forth; let us try the augury of the combat, to know if we shall be successful. Ho!—let the captive enter in whose veins is contained the secret of our destiny!' At the command, a band of armed men, hitherto stationed upon the outskirts of the meeting, advanced, and in the midst of them was conducted a Roman prisoner. As soon as his keepers had led him within the central portion of the circle, they left him to the gaze of that host of onlookers. His countenance was young and ruddy, and he was completely armed after the Roman fashion; while the rich ornaments with which he was adorned, as well as his military insignia, showed that he was of some account among his countrymen. Alas! it was no other than the thoughtless, light-hearted centurion, Lucius—he who had so impatiently yearned for enterprise, and who was now so likely to find it! But how had he stumbled into such an unfortunate dilemma? That, also, had happened in a manner sufficiently characteristic. While wandering from the outposts of the army into the country in quest of adventures, his heart had been suddenly smitten by the bright looks and sunny ringlets of a beautiful German maiden. With him, to behold was to admire and covet; and he addressed her with well-turned periods of blandishment, such as Ovid himself would have applauded. The fair one, indeed, did not understand the language, but with the natural

instinct of her sex she divined its purport; and her delicacy having been shocked at such an abrupt mode of wooing, and so greatly at variance with the chivalrous courtesy of her countrymen, she fled in alarm from the youth's addresses. Lucius pursued with reckless eagerness; the chase was long and well contested; but just when he had neared, and was about to grasp the flying Daphne, he found that he had rushed headlong into the midst of an ambush by which one of the approaches to the place of council was guarded. His arms were secured before he could offer resistance, and thus he found himself not only a witness, but likely to become a party, in the wild orgies of these forest senators. Perilous, however, although his situation was, the spirit of the youth in that trying moment was worthy of his heroic countrymen. Without a single expression of fear he returned the stern gaze of the thousands of eyes that flashed upon him, and his upper lip even curled with a contemptuous smile as he looked at the miserable warlike appointments of the multitude, and thought of the task to which they were devoted. It was a redeeming trait of feeling the courage of that giddy young soldier, as he stood there alone and helpless; and when his eye rested upon Hermann, who sat conspicuous among the chiefs, he raised his hand, and shook it in reproach and defiance.

At last the priest of Odin approached; and the sight of that stern functionary, whose unwashed hands were still red with the blood of sacrifice, seemed only to awaken the mirthful spirit of the Roman. 'Venerable Flamen,' he said, 'will you deign to inform me in what capacity I am to officiate here? Surely it can be in no other than that of a victim, as I am scarcely qualified to play the priest?'

'Brave youth,' replied the other, speaking in the Latin tongue, and smiling grimly, for the reckless gallantry of the prisoner had touched his otherwise impenetrable heart, as steel is cut by steel—'thou shalt not be converted into a beast of burthen, as is done by thy countrymen with their captives, when they make the lives of gallant enemies bitter with chains and bondage. An antagonist shall be set before thee in the arena: fight, then, and conquer if thou canst; and thou art free to depart unquestioned and unharmed. And remember that thou representest the fate of thy countrymen, which is typified in thy victory or discomfiture: therefore strike boldly.'

'Dost thou think I need words of encouragement,' cried the young officer proudly, 'when such a motive is before me? Bring your bravest champion into the ring, or a hundred in succession if thou wilt!' And as he spoke he advanced a step, covered himself with his shield, and waved his sword, as if already confronted by a combatant; while his head drawn back, and proud menacing looks, proclaimed universal defiance.

He was not likely to wait long for an antagonist. His fearless language and gallant bearing had kindled such esteem among these fierce warriors, that all were eager for the luxury of a combat where victory would be so glorious, as well as on account of the great public issue that was at stake; and each accordingly endeavoured to outstun the others by a declaration of his claims to such an enviable distinction. Louder and fiercer grew the strife of tongues; weapons at last were shaken in mutual menace; and for a moment it seemed as if Lucius had been thrown, like an apple of discord, into the midst of this furious throng, to involve all in civil uproar and

bloodshed. But a remedy was fortunately at hand that could control German anarchy even at the wildest. The chief priest gave a signal, and immediately his consecrated band advanced, armed with stout saplings, which were providently always in readiness for such emergencies, and which now descended without ceremony or mercy upon the shoulders and limbs of the most clamorous of the competitors. And the effect of such discipline was truly marvellous. Had the noblest of the chiefs attempted such a deed, the slightest blow inflicted upon these freeborn, high-spirited warriors would have instantly provoked a bloody retribution. But on this occasion the fiercest quailed, the proudest gave back, and not a murmur was heard among the chastised. The priests were the ministers of the gods, and therefore these strokes, instead of being earthly insults, were only admonitions from heaven.

It now appeared to the politic Flamen that no common precaution was necessary to match such a combatant as Lucius; and therefore, while he glanced over the front rank of chiefs, each of whom silently burned for the encounter, he marked especially the high-crested form of Sigimer still unbroken by age, the fierce veteran-bearing of Inguiomar, and the redoubted skill of Clodovich, chief of the Bructeri, three champions equal to any emergency in which mortal prowess could avail. In preference even to these he would have selected Hermann himself; but his was a life too important to the general welfare to be exposed to the chances of such a conflict. He announced the names of the warriors from whom the choice would be made, and every other claim was immediately relinquished. It was now necessary to consult the gods in the choice of the favoured individual, and the priest drew from his cloak the instrument of divination. It was the branch of a fruit-tree, which he broke into three pieces; and having marked each for a separate candidate, he covered them up within the folds of a mantle. He raised his eyes to heaven, and praying the gods to direct his hand, he drew forth at random the twig of Inguiomar. He replaced it, and made another similar experiment; but at this time the twig of Sigimer was exhibited. A third appeal was necessary; and a second time the twig of Inguiomar was drawn from the lots, thus indicating that the gods had selected him as the omen of the destinies of Germany. The champion exultingly sprung into the circle where the Roman awaited him; while the spectators, who were delighted with the prospect of blows and bloodshed, as well as anxious for the augury, fell back, and looked on with an intensity that permitted not the twinkling of an eyelid. It was a strange spectacle to see these two men, each armed in the manner of his country, and prepared to do battle in the fashion of his own people, to decide which party would prevail. The bulky German, who resembled some statue of Hercules, completely overtopped his antagonist, and looked as if he could crush him with a single blow; but his limbs, powerful though they were, had no defence; while the slender but vigorous and well-disciplined Roman stood confident, not only in his native courage, but in the tempered panoply by which he was protected.

The combat was commenced by Inguiomar with missiles. He walked round the extremity of the circle, poising a dart in his right hand, and watching the favourable moment to discharge it; while Lucius, who stood in the centre, awaited the blow, and wheeled with every movement of his

antagonist. At length Inguiomar hurled his weapon, which stuck and quivered in the Roman shield: another and another followed in rapid succession; but the buckler still interposed, although a red stream trickling upon its bright and embossed plates showed that one point at least had penetrated to the arm of Lucius. The youth wrenched the darts from his shield, and rushed upon the giant, who, having expended all his missiles, was obliged to abide the issue of a hand-to-hand encounter. Inguiomar poised his heavy fram; and although his well-directed thrusts failed to pierce the armour of the other, their force sent him reeling backward as often as he advanced. At length the German missed his aim, upon which the Roman, closing lightly upon him, made a thrust under his painted buckler, and wounded him in the thigh. '*Hoc habet!*' shouted Lucius jestingly, in the style of a gladiator upon the arena, as he waved the reddened point of his sword. The German, dashing to the earth his useless fram, seized his iron-bound club that lay beside him, and wielding it with both hands, he rushed to the combat with double fury. He discharged a sudden blow that seemed strong enough to overturn an oak; and although it was intercepted by the shield, yet its dint was so terrible that the stunned left arm of the centurion fell powerless by his side. The club again whistled through the air, and with a rapidity which the eye could scarcely follow, it descended with stroke on stroke. The battered helmet of Lucius crashed under the tempest; he reeled hither and thither, still attempting to wield his sword, and at last fell insensible upon the ground. Inguiomar darted upon his prey, and snatching up one of his pointed javelins that had lately been so useless, he deliberately thrust it deep into the bosom of the Roman above the edge of his cuirass. The crowd, who had remained breathless during the fluctuations of the combat, loudly applauded the victor; while the priest of Odin, rushing forward, bent over the dying man, and watched the jet of warm blood that spouted from the wound. 'The omen is still favourable!' he exclaimed; 'the stream flows freely, and thus shall our enemies perish!' A yell of triumph again rent the heavens at the tidings of this double confirmation. Twice the gods had commanded them to go forward, with the assurance that they should be victorious.

While all was thus wild glee and joyful anticipation among the forest warriors, the death-wound of Lucius had partially awoke him to consciousness; and life began to stir again within him only because his life-blood was flowing fast. But he heeded not, perhaps he was even unconscious, of the shouts of victory, or the eagle glances of the priest who hung over him, and watched the departure of existence with such a critical inspection. His affectionate heart was evidently far away; away amidst the scenes of his native home, in which he felt as if he were dying in peace, while beloved faces hovered around him, and tender voices murmured in his ear. 'My widowed mother, my gentle-hearted sister,' he faintly said, 'weep not, for this sickness will soon be over! Your cold hands have soothed the burning of my brow, and smoothed my couch, that I may rest more softly. Leave me now, dear ones, for I would fain sleep: good-night!' He indeed fell asleep. The iron-visaged priest, who listened and understood, underwent for a moment an unwonted change of feeling; and something—was it a tear?—seemed to struggle with his stern eyes, that only looked sterner at the interruption. 'Go,' he said in a hoarse, broken voice to his assist-

auts, 'carry forth the body; raise a lofty pile; let the dead be consumed with his arms, as if he had expired upon the banks of his own Tiber; and may his gallant spirit find happiness in the heaven of his own people, and among his native gods!' The assembly defiled from the place of meeting in ranks, embattled as if for instant warfare; and their departure was like the beginning of a tempest, which has received a commission from heaven to destroy and regenerate. The last party that plunged into the surrounding forest was lighted by the first blaze of the pyre that was kindled for the funeral rites of the young centurion.

IV.

The morning dawned—a morning of brightness and beauty—and as yet not a shadow of conspiracy hovered upon the precincts of the Roman camp. On the contrary, all still wore the aspect of perfect security and peace when the tents were struck, and the soldiers had resumed their march; and the only war they anticipated was against the obstacles of nature, where thickets were to be penetrated, and swamps bridged over or embanked, in their victorious progress. A thick forest lay before them, the recesses of which must be opened; and the axe and saw, those instruments of conquest more effectual in the hands of Romans than even the sword and the spear, were brought into active operation; and the slow march and frequent halts of the legions were accompanied with the incessant crash of lofty trees, that fell in multitudes before their progress.

The hour of mid-day arrived, and yet scarcely half a league of forest had been won. The soldiers, exhausted with six hours of constant toil, were permitted to seat themselves upon the ground for the purpose of enjoying a slight repast. Scarcely, however, had the meal been ended, scarcely had it even begun, when suddenly every trumpet sounded to arms with startling abruptness, and every troop hurried to its proper standard; after which there was an awful stillness of suspense, while every soldier looked at his fellow, to ascertain the cause of this interruption. What danger could be dreaded now? The tribes had been everywhere submissive—no enemy was visible, or could have mustered in the neighbourhood! And yet some immediate danger there must be, for Varus, with looks of alarm, and surrounded by his principal officers, was seen hurrying to and fro, at one time arranging the ranks, at another altering his dispositions, and ever and anon surveying with looks of despair the ground which his army occupied. And alas for Rome if here her choicest army is to abide an encounter! In front was the forest which they had begun to pierce, but into the unknown recesses of which they could not safely venture; upon either flank steep hills menaced and commanded them; while the rear was enclosed by formidable marshes, where even the solitary traveller could scarcely thread his way in safety. A few moments only had been granted for these observations, when the hills suddenly trembled with the blowing of war-horns; and at the signal the ridges appeared overtopped by armed thousands, hurling an exulting defiance upon the entrapped Romans below, and leaping and brandishing their arms in all the confidence of victory. There was no further room for doubt or inquiry among the [illegible]ers: they saw that their last march had been made.

It was but an instant before this ominous alarm that a man exhausted, bleeding, and writhing with anguish, had crawled forward to the advanced pioneers in the wood, and requested them to carry him immediately to their commander, as he had important tidings to communicate. This was done; and in the wounded man Varus at once recognised Rudiger, the friend of Rome and Segest. The fainting German immediately revealed his fearful tale; but Varus, blind to the last, would not even yet be convinced. Hermann had conducted the army thus far through the perilous ground, and at present occupied the swamps, with the rearguard composed of the auxiliary Germans; and yet- but there is no time for conjecture—the truth must be instantly ascertained! An officer was ordered to hurry to the rear, and summon Hermann immediately into the presence of the commander; but the messenger soon returned at full gallop, and with tidings of dreadful import. The auxiliary bands had been withdrawn from the main body, and were so posted as to block up every path of retreat; and Hermann himself had only answered the summons with fierce denunciations and defiance. At this stunning blow the heart of Varus sank in a moment into utter despair. By what sorcery had he been lulled into such incredible delusion? And, above all, how shall he extricate his army from the effects of such an ill-placed confidence?

But there was no time for despair, or even for consultation—the battle has already begun. From the hill-tops darts began to descend in volleys, and these ramparts of nature must be stormed. The Roman ranks advanced against the death-shower, and endeavoured to ascend the steeps; but no sooner had they reached the base of the hills, than huge fragments of loosened rock were sent rolling down, crushing and sweeping them away in multitudes. Varus presented a front to the enemy in every direction; but it was an enemy whom he could not reach. Again and again he threw forward strong masses of his troops, supported by archers and slingers, against the hills—if only one of these could be occupied, he felt that the barbarians might be dislodged from the rest, or at least the retreat of his army secured—but the missiles of the Germans descended as thick as hail, and with a force derived from their descent which the Roman armour could not resist. The morasses in the rear were then attempted, but these were found to be equally well defended; and while the disencumbered and light-footed Germans moved securely among the intricacies of the ground, which were familiar only to themselves, the heavy-armed legionaries were either swallowed up among the swamps, or securely transfixed with darts while they stood uncertain of their way. The whole army swayed and reeled to and fro in these successive attacks upon marsh and mountain, while with every moment the carnage was deepening, and the ground becoming more thickly bestrewn with the dead and dying. To add to their miseries, a heavy shower of rain descended, by which every bow-string was relaxed, and every arm benumbed; the ground beneath their feet became so miry that men and horses floundered in confusion; while the Germans, to whom all seasons were alike, seemed only to be inspired with greater alacrity by the torrents that refreshed, while they drenched their naked bodies. Hour after hour the battle thus continued till night; and the Romans had prayed for its protecting covering long before it came. Upon the drenched and miry ground they laid themselves down—'the weary to

sleep, and the wounded to die.' But alas! the sleep that was snatched on this occasion was brief; or if protracted, it was more painful than waking, from the frightful images with which it was haunted, in which fancy endeavoured to out-picture the most dismal realities.

But who amidst these warriors had greater cause to grieve, or grieved more deeply, than Varus? In the darkness no tent was pitched, no table was spread, no torch or watchfire was lighted; and he sat upon a little mound surrounded by his officers, while each could only recognise his fellows by the sound of their voices. All felt that their danger was indeed imminent, that perchance their ruin was unavoidable; but although the folly of their commander had occasioned these distresses, not a word of murmur or reproach was uttered: they rather respected the depth of his anguish, and spoke the language of sympathy and hope. A deliberation was carried on in whispers upon the best method of extricating the army on the following morning. To advance into the forest was certain destruction; to effect a lodgment upon the well-defended heights had already been found impracticable; and it was resolved that the only chance of safety lay in a desperate attack upon the Germans who blocked up their rear, by which a footing might be gained upon ground more favourable for an equal encounter. While this mournful deliberation was held under the gloom of midnight, and amidst groans and corpses, a far different spirit prevailed among the enemy. The tops of the hills blazed with a thousand watch-fires, round which the Germans spent the night in merriment and feasting, or in listening to the songs of their bards. But one man there was among them whose cares seemed too weighty for song or festival, and who watched while others reposed; and need we add that it was Hermann? At one time he deliberated with the most experienced of the chiefs, and at another he animated the warriors to prepare for the morrow. He also glided from point to point over the extensive field, to ascertain that not an avenue of escape was left unguarded; listened anxiously at times to the faintest sound among the Roman soldiery; and strained his eyes through the gloom, if haply he might detect the shadow of any movement. Victory indeed was within his grasp; but still his enemies were Romans.

The miserable Varus having ended his deliberations, dismissed the officers to their posts, after which he folded his mantle around him, and stretched himself upon the ground to enjoy a short repose before the toils of the morning commenced. But the hoarse murmuring of the midnight blast, combined with the loud outcries of revelry and triumph from the surrounding fog, kept sleep from his weary eyelids. At length, however, he sank into unconscious lethargy in spite of the heartsinking uproar; and as he slept a fearful scene unfolded itself to his fevered imagination. A land rose before him, parched and blackened beneath the rays of a withering sun, and stretching far away into vast solitudes; and along its cheerless surface, and in full security, a mighty army swept along, which he knew from its ensigns to belong to his own country. At the head of it also, and invested with the insignia of a consul, marched an aged warrior, whose brow was wrinkled like that of a usurer, although his eye was bright with enterprise and hope; and at his side was a smiling barbarian, who seemed to utter bland words in his ear, and urge him thoughtlessly forward. And who were

they? The dreamer shuddered in his sleep, for he knew that leader of evil omen without being left to conjecture. The scene shifted; and he beheld these legions in fierce conflict with an enemy that made the whole field blaze with their steel panoply, and reverberate to the thunder of their huge drums; and the air was darkened with clouds of arrows discharged by Parthian horsemen, who came and went like the whirlwind. Again the scene shifted, for the battle was over, the ground was piled high with the corpses of the Roman army, and nothing in the form of life or motion was there but the dim outline of a phantom that wandered over the scene of carnage, wringing his hands, and lamenting with shrill, feeble murmurings. Varus looked narrowly, and recognised the pale face of the spectre, and the furrowed brow which he had so lately seen; and as he continued to gaze, the unearthly mourner ceased to weep, and sternly thus addressed him—'By what fatality, oh Quintilius Varus, hast thou spurned the lesson of my example? But I reproach thee not, for the penalty of thy errors shall be exacted to the full. Behold! such as I am, to-morrow thou shalt be!' Varus started from his rude couch, and unconscious that all was but a dream, he exclaimed, 'Stay, Crassus, and tell me if my followers shall be spared?' The attendants who watched his slumbers shuddered at the portent, and began to deprecate it with hasty prayers. The unfortunate commander would tempt the agony of sleep no further: he sat motionless, with folded hands, and eyes directed to the east, impatient for the coming of the dawn, that the worst might be ascertained and endured.

At length, when the first gray light broke sadly through the clouds, so that the outline of surrounding objects could be discerned, the Roman army was set in motion, and the general harangued the troops. He concealed as much as possible the precariousness of their situation and his own disquiet, and he besought them to make one noble effort for safety, for victory, for vengeance. They answered with shouts of resolution, and desired to be led to battle. According to the agreement of the previous night, a desperate attempt was to be made to force the passes in the rear, by which the whole army might defile into more favourable ground; and the troops were therefore thrown forward in columns to the place of onset, preceded by active, unarmed explorers, who generously devoted themselves to the missiles of the enemy for the purpose of discovering the outlets. But wherever the Romans moved they were encountered and almost buried beneath the darts of the Germans; and whenever the ranks attempted to win a stable footing, they were broken by the obliquities of the paths. The battle warmed and deepened; and still while it raged in front the heavy showers of darts continued to ply them upon either flank from the hills without intermission. At length, after a desperate struggle of hours, a small portion of the morass was won, and a cohort, diminished to one-half of its numbers, established itself upon a solid isthmus, and gallantly maintained it, although opposed by thousands; and from this landing-place of hope the successful legionaries shouted to their fellow-soldiers to hurry to the rescue. And rescue soon arrived in the form of the eighteenth legion, the soldiers of which, struggling through the mire by twos and threes, proceeded to rally and form upon the recovered ground for an effort that might yet be successful. Here was the point of danger; and Hermann, at the head of his followers, threw himself across

the path to bar all further retreat. And now commenced the full fury of the engagement upon a spot where the Romans could avail themselves of their superior arms and discipline: and before their strong, simultaneous onset the barbarian troops were torn asunder, like the stubborn soil before the ploughshare. But the Germans, when baffled in front, closed upon the flanks of their antagonists, as if they would have smothered them in their ranks; and when all would not avail, each selected a foe, and grappled with him in a death-struggle, where gigantic personal strength on one side was more than counterbalanced by skill and weapons on the other. But such a contest could not long endure: there was a change, an intermission: the Germans at first gave back, as if exhausted; and instead of returning to the charge, they stood at gaze before their terrible opponents; while many, staggering to the rear, alarmed their fellows with the sight of the deep gashes on their bodies and limbs inflicted by the Roman falchion. The Romans pressed on, and the Germans retreated; the retreat became a flight, in which the contested ground was abandoned; and the legionaries, with joyful outcries, proclaimed their success, and summoned the rest of the army to follow. Alas for Germany at this awful moment! The invaders are on the eve of winning a safe retreat, if not a victory, and they will return with a terrible retribution!

And where was Hermann at this momentous crisis? He had fought on foot, and in the front-rank of his soldiers, animating them by voice and example, and it was with an indescribable thrill that he saw them waver, and at last seek safety in flight. Only his own personal followers remained with him, certain gallant young warriors of the Cherusci, who, according to the fashion of their country, had devoted themselves to perish wherever their leader fell; and with these he resolved to make a last effort, not to conquer, but to die gloriously. He has been unable, indeed, to give freedom to his country; but still he can bestow at least the example of a heroic end—that boon which is never fruitless. He waved his sword, already reddened to the hilt with slaughter, and announced his purpose to his followers, who agreed with ardour to follow wherever he led. They linked themselves together by their broad belts, that they might rush into the thickest of the enemy, and fight, and perish as one man. But at that moment there was heard from the rear the rush of a coming multitude, and a sharp clear voice of exhortation accompanied it, that pierced through the whole thunder of battle, like the shrill notes of a fife through the clamours of a hundred war-trumpets. Hermann was just in the act of making his final onset at the head of his devoted band, when he suddenly saw at his side the beautiful Thusnelda, armed with a spear, which she had snatched from the hands of a dying legionary; and with her was a band of German women, who had arrested the flight of their countrymen, and driven them back upon their pursuers. With a sudden stroke she pierced the bosom of a centurion whom she confronted, and at his fall loud cries of exultation burst from her companions. And crowding upon their steps came the late fliers, glowing with the shame of defeat, and anxious to retrieve their lost honour in the sight of those they loved; while reinforcements from the hills poured in, at the same instant, to aid in defending the contested pass. Hermann beheld his bright one at his side like a flash of joyous sunshine through the tempest: he looked at the rallied thousands who advanced

to the encounter with redoubled energy, and he felt that the cause of liberty was no longer hopeless. 'Thusnelda,' he exultingly exclaimed, 'thou hast brought back freedom to thy country: withdraw thee now to safety, and see how I shall fight in thy presence!' And never did the sweep of the ocean whirlwind rush with more impetuous fury upon the stricken and dispersed fleet than did Hermann and his rallied warriors upon the Roman ranks. Before that tremendous charge valour and discipline were unavailing; and the enemy, taken unexpectedly, were borne backward with resistless energy to their main body; while multitudes, during that repulse, were swallowed up in the swamps, or struck down and trampled under foot. Thus the attempt had completely failed, and the Romans, with forces diminished to one-half of their former numbers, occupied their original position; while the egresses which they had attempted were strengthened by rude breastworks hastily thrown up on the evening after the battle had closed, and by which the deliverance of the enclosed legions was rendered more impracticable.

Mournful, indeed, was now the condition of the defeated army, as the evening closed once more upon its broken and exhausted relics. When they had resumed their station, the ranks were concentrated—but how shrunken and spiritless compared with the mighty host that had occupied the same ground only two days ago! Could these be the legions that had hoped to march northward in triumph, and plant the victorious eagle as far as living thing existed, until their progress was arrested only by that impassable boundary of ice with which nature had walled that mysterious part of creation? Few of the survivors had escaped unwounded, and many with pale countenances and fainting limbs were obliged to prop themselves upon their spears; but still their gallant hearts thought less of pain than the ignominy of defeat. Where were now their promises and their hopes, and what would be said of them at Rome? They had been beaten; and by whom? By naked barbarians, who had caught and crushed them with ease. How would the tale sound by the hearths of their affrighted countrymen, and what atonement could compensate for so great a calamity?

While such were the feelings of the humblest soldier, those of the unhappy general—— But silence, like the veil of the painter, must be thrown over that which no language can describe. He, too, was wounded almost to the death; and as he raised his languid eyes in the twilight, and surveyed the silent, wo-worn remains of his host, the forms of the soldiers wavered before his dim vision like ghosts rather than living men.

'I have endured,' he exclaimed with a groan, 'the deepest disgrace that was ever fated to befall the Roman arms; and wherefore, then, should I survive so nameless an infliction? Could I live, to confront my country, upon which I have brought such a burthen of shame? The very stones of Rome, so often animated with the triumphal processions of successful commanders, would cry out against me if the people remained silent. Could I even endure, with the returning day, the looks of my faithful soldiers whom my folly has ruined? I will spare myself this misery by stealing from the world in silence. Farewell, my beloved friends! Let those who survive this ruin at least pity my memory, if they cannot cherish and defend it.' When he ceased, the officers who surrounded him in silence heard his sword rattle in the sheath as he drew it forth. He held

the weapon with both hands, and exerting the last remains of his strength, he plunged it into his breast, and instantly fell dead at the feet of the by-standers. An abrupt, shuddering groan burst from them, but not a voice or hand had interposed; they thought he had but performed a sacred duty to his country and himself. And with them also a duty remained, which honour, as they imagined, required them to fulfil: it was to follow their commander. Could they return home as baffled fugitives, and tell that they had left him at Teutoburg? A fearful scene of self-immolation ensued among the chief officers, some falling upon their own swords, and others by mutual and friendly slaughter. Such was the point of Roman honour, so justified by sages and lauded by poets, and which on this, as on so many former occasions, was but too rigidly fulfilled. The noblest spirits of antiquity could dare all but merited reproach, and endure everything but life degraded. Little did mankind then know that a sacred Being, in the form of a boy as yet only nine years old, was meditating a loftier morality by the banks of the Jordan, or upon the plains of Galilee; and preparing to teach in words that shall endure for ever that there is a disapprobation more terrible than that of the world, and a reward more glorious than the utmost of earthly fame!

When the morning of the third day of misery dawned, the Romans rose like victims for the slaughter. All their chief officers were dead, and upon what leading could they now depend? The ranks stood in silence, for each man but too well understood the feelings of his neighbour. It was then that a single voice was heard among them, speaking in hesitation, for it spoke of surrender. Every eye indignantly turned in search of the recreant, and they found that it was Cesonius, one of their dead commander's lieutenants, who had trembled and stood aloof while his companions were falling around the body of Varus. As he was now the officer of highest military rank, the command had devolved upon him, and he thought that a seasonable opportunity had arrived to preserve the army—and himself. But to surrender with arms in their hands! to surrender to barbarians, to become their sport or their victims—he had committed by the proposal a foul act of treason which only his life could expiate. The surviving centurions—as if they still stood in safety within the Forum of an embattled camp, or upon a field of victory, instead of the edge of ruin into which in a few moments more they would be hurled—assembled with the ceremonial of a military court, and arraigned the lieutenant before them as a traitor. The stern and compendious code of war was unrolled, the violated statute was read, and the culprit was unanimously voted to have incurred its penalties; after which, with all fitting solemnity, his head was struck off by the axe of the executioner. Who would henceforth speak or even dream of surrender? The soldiers spurned the bleeding trunk from their path, and applauded the deed that had vindicated the laws of Rome. They were now prepared for a last and terrible effort, in which they would either burst through the foe, or leave their bodies upon the field; but a leader was necessary for the emergency. All eyes were turned upon the veteran Septimuleius, the bravest and most experienced of their surviving officers, and the old man devotedly undertook an office so full of danger and despair. From the attempts of the preceding day the safest passes through the defended swamps had been ascertained; and these were to be assailed by

the freshest of the troops, while the wounded and more enfeebled were placed in the centre. The cautious Septimuleius also commanded the soldiers to leave all the baggage behind, and carry with them nothing more than three days' provisions; as after that interval, should their attempt be successful, they would be able to reach some friendly territory.

In the meantime Hermann, who had risen before the daylight, was watching the movements of his enemies like a bird of prey. He saw at last their miserable skeletons of legions concentrated into compact masses, the heads of which were directed against the outlets, and he surmised the desperate nature of the effort for which these arrangements had been made. He turned and warned his gallant Germans, exhorting them to abide and repel this last onset of despair, so that not a foe should escape; and with clashing weapons and tremendous shouts they at once welcomed and defied the advancing Romans. The shock of the onset made the ground tremble beneath the combatants; spears and bucklers crashed and shivered; a steam went upward from the centre of the struggle, like the seething of a mighty caldron, while the living mass reeled hither and thither, as the changes of battle prevailed. Even those who fell, whether German or Roman, endeavoured in the agonies of death to strike a last blow at those antagonists who warred over their prostrate bodies. In such a close conflict the hardihood of the Romans would have finally prevailed but for the conduct of the indomitable Hermann, who rallied or headed his troops wherever his presence was required, or gave them needful intermission by supplies of fresh forces. As for him, he appeared equally impervious to toil and danger: his whole soul concentrated on an achievement the fame of which was to last for ages, seemed for the time to have imparted its deathless and ethereal energies to the body it tenanted. And ever and anon there thrilled from the rear the glorious bursts of a war-song, in a voice which he well knew, and the tones of which were like draughts of a new existence to his parched and feverish heart.

Thus the battle continued from hour to hour. The morning had passed into mid-day; mid-day was followed by noon; and the noon was setting into evening—a lapse of time which hope contracted into a fleeting hour, and despair extended into a long dismal year; but still the escape of the Romans had not advanced a single step. Their numbers were worn down to a handful, bleeding, exhausted, and staggering with every effort, like men drunken or asleep, yet still wielding their weapons as if mechanically, and more in the hope of dying honourably than achieving a safe departure. Another hour would decide their fate, for the evening was closing fast, and should it find them there, it would come with the darkness of the grave. In this dreadful crisis a stratagem occurred to the mind of Septimuleius, upon which he placed his last dependence, and which he was prompt to execute. He ordered a soldier to set fire to the baggage, for the purpose of distracting the attention and exciting the cupidity of the Germans. The command was obeyed just as the twilight had approached; and no sooner did the barbarians witness the rapidly-spreading blaze, than they feared that the rich booty was about to be torn from their grasp. They began, therefore, to remit in their exertions; whole ranks soon abandoned the unprofitable toil of conflict; and there was a general rush to the conflagration, where each was eager to snatch a handful from the flames. Thus the

defence of the passes was relinquished, and the Romans advanced with renewed confidence and vigour. Their sudden and impetuous onsweep burst asunder the weakened ranks opposed to them; and fighting onward with rapid career, they cleared the network of morasses, and gained the open ground, where they formed in order, and continued their retreat. Hermann, indignant at the covetousness of his people, who had so suddenly broken loose from control, still continued to resist at the head of his own personal followers: and although borne back by numbers, he hung upon the track of the flying enemy to the last, and harassed them in flank and rear. Scarcely, however, had three thousand thus escaped the miserable gleanings of so great a harvest of death.

And now the mighty deed being done, the preternatural excitement that had achieved it was exhausted, so that the pursuers, as they retraced their steps at midnight, dropped down to sleep by the way among the bodies of the dead. Thus also it was with their gallant chieftain. Faint, but still exulting, he threw himself beneath the shelter of a tree; and when he relapsed into immediate but deathlike repose, a gentle hand seemed to bathe and caress his burning temples, a sweet voice murmured words of exulting congratulation, and by fits some soothing song was poured forth, that told of the hero's reward from woman's love and devotedness. Such sleep was rapture; and Hermann smiled, as he slept, at these dream-like sounds that melted so sweetly into his repose, with the utterances of a voice so fondly endeared to his heart. But he knew not that it was Thusnelda herself who had hovered near him during the fight, and who now stood over him to watch and soothe his slumbers: and she felt herself richly repaid by the words of fervent tenderness that at times fell unconsciously from his lips. Before the morning light arrived she stole from the spot, covered with blushes, and Hermann afterwards awoke, refreshed by what he deemed but a vision of the night.

Where better can we leave that noble, that matchless pair, than upon the field which they have made a hallowed spot to all ages, and in the contemplation of a victory of which every age has reaped the fruits? Trivial, compared with these, would be the account of the acclamations that hailed them as the joint deliverers of their country; and the wild festive glee with which the land resounded when their union was celebrated amidst the trophies of their achievements. And did their course, so brightly commenced, continue to the close unclouded? But happen what might, could they be deemed unhappy who had accomplished such a deed? It is enough to know that the spirit of resistance thus kindled was never extinguished; that the Romans, in their subsequent invasions, never penetrated beyond that spot upon which Varus and his legions had fallen; and that when, in the fulness of time, the men of the North became invaders in their turn, and advanced to deliver and regenerate the world, they fought and conquered under the inspiring war-cry of 'HERMANN!'

PUBLIC LIBRARIES.

WE welcome the indications, now crowding upon us from every quarter, that the people of this country are beginning to feel the importance of taking active measures for the establishment and increase of public libraries. Large collections of books, open for common use, are at once the storehouses and the manufactories of learning and science: they bring together the accumulated fruits of the experience, the research, and the genius of other ages and distant nations, as well as of our own time and land; and they create the taste, as well as furnish the indispensable aids for the prosecution of literary and scientific effort in every department. In great cities they qualify the exclusive spirit of commercial and professional avocations, and encourage men to steal an hour from the pursuit of gain, and devote it to the attempt to satisfy a natural curiosity and to cultivate an elegant taste. Connected with literary and academical institutions, they supply the means and multiply the objects of study, and keep alive that enthusiasm in the cause of letters without which nothing great or permanent can ever be accomplished. Their establishment is a boon to all classes of society, and all may find in them both recreation and employment; for as the poet Crabbe says –

> 'Here come the grieved, a change of thought to find;
> The curious here, to feed a craving mind;
> Here the devout their peaceful temple choose;
> And here the poet meets his favouring muse.'

The origin of libraries is involved in obscurity. According to some, the distinction of having first made collections of writings belongs to the Hebrews; but others ascribe this honour to the Egyptians. Osymandyadas, one of the ancient kings of Egypt, who flourished some 600 years after the Deluge, is said to have been the first who founded a library. The temple in which he kept his books was dedicated at once to religion and literature, and placed under the special protection of the divinities, with whose statues it was magnificently adorned. It was still further embellished by a well-known inscription, for ever grateful to the votary of literature: on the entrance was engraven, 'The nourishment of the soul,' or, according to Diodorus, 'The medicine of the mind.' It probably contained works of very remote antiquity, and also the books accounted sacred by the Egyptians, all of which perished amidst the destructive ravages which accom-

panied and followed the Persian invasion under Cambyses. There was also, according to Eustathius and other ancient authors, a fine library at Memphis, deposited in the Temple of Phtha, from which Homer has been accused of having stolen both the 'Iliad' and the 'Odyssey,' and afterwards published them as his own. From this charge, however, the bard has been vindicated by various writers, and by different arguments.

But the most superb library of Egypt, perhaps of the ancient world, was that of Alexandria. About the year 290 B.C., Ptolemy Soter, a learned prince, founded an academy at Alexandria called the Museum, where there assembled a society of learned men, devoted to the study of philosophy and the sciences; and for whose use he formed a collection of books, the number of which has been variously computed—by Epiphanius at 54,000, and by Josephus at 200,000. His son, Ptolemy Philadelphus, an equally liberal and enlightened prince, collected great numbers of books in the Temple of Serapis, in addition to those accumulated by his father, and at his death left in it upwards of 100,000 volumes. He had agents in every part of Asia and of Greece commissioned to search out and purchase the rarest and most valuable writings; and amongst those he procured were the works of Aristotle, and the Septuagint version of the Jewish Scriptures, which was undertaken at the suggestion of Demetrius Phalereus, his first librarian. The measures adopted by this monarch for augmenting the Alexandrian Library were pursued by his successor, Ptolemy Euergetes, with unscrupulous vigour. He caused all books imported into Egypt by Greeks or other foreigners to be seized and sent to the Museum, where they were transcribed by persons employed for the purpose; and when this was done, the copies were delivered to the proprietors, and the originals deposited in the library. He refused to supply the famished Athenians with corn until they presented him with the original manuscripts of Æschylus, Sophocles, and Euripides; and in returning elegant copies of these autographs, he allowed the owners to retain the fifteen talents (more than £3000 sterling) which he had pledged with them as a princely security. As the Museum, where the library was originally founded, stood near the royal palace, in that quarter of the city called Brucheion, all writings were at first deposited there; but when this building had been completely occupied with books, to the number of 400,000, a supplemental library was erected within the Serapeion, or Temple of Serapis, and this gradually increased till it contained about 300,000 volumes—making in both libraries a grand total of 700,000 volumes.

The Alexandrian Library continued in all its splendour until the first Alexandrian war, when, during the plunder of the city, the Brucheion portion of the collection was accidentally destroyed by fire, owing to the recklessness of the auxiliary troops. But the library in the Serapeion still remained, and was augmented by subsequent donations, particularly by that of the Pergamean Library of 200,000 volumes,* presented by Mark

* The library of Pergamus was founded by King Eumenes, and enlarged by his successor Attalus. It soon became so extensive that the Ptolemies, afraid that it would speedily rival their own collection at Alexandria, issued an edict forbidding the exportation of papyrus; but this prohibition, so far from attaining the unworthy object for which it was destined, proved rather beneficial, for the Pergameans, having exhausted their stock of papyrus, set their wits to work, and invented parchment (*charta Pergamena*) as a substitute.

Antony to Cleopatra, so that it soon equalled the former, both in the number and in the value of its contents. At length, after various revolutions under the Roman emperors, during which the collection was sometimes plundered and sometimes re-established, it was utterly destroyed by the Saracens at the command of the Caliph Omar, when they acquired possession of Alexandria in A. D. 642. Amrou, the victorious general, was himself inclined to spare this inestimable treasury of ancient science and learning, but the ignorant and fanatical caliph, to whom he applied for instructions, ordered it to be destroyed. 'If,' said he, 'these writings of the Greeks agree with the Koran, they are useless, and need not be preserved; if they disagree, they are pernicious, and ought to be destroyed.' The sentence of destruction was executed with blind obedience. The volumes of parchment or papyrus were distributed as fuel among the five thousand baths of the city; but such was their incredible number, that it took six months to consume them. This act of barbarism, recorded by Abulpharagius, is considered somewhat doubtful by Gibbon, in consequence of its not being mentioned by Eutychius and Almacin, two of the most ancient chroniclers. It seems inconsistent, too, with the character of Amrou, as a poet and a man of superior intelligence; but that the Alexandrian Library was thus destroyed is a fact generally credited, and deeply deplored by historians. Amrou, as a man of genius and learning, may have grieved at the order of the caliph, while, as a loyal subject and faithful soldier, he felt bound to obey.

Among the Greeks, as among other nations, the first libraries consisted merely of archives, deposited, for the sake of preservation, in the temples of the gods. Pisistratus, the tyrant of Athens, was the first who established a public library in his native city, which, we need not say, always took the lead in everything relating to science and literature in Greece. Here he deposited the works of Homer, which he had collected together with great difficulty and at a very considerable expense; and the Athenians themselves were at much pains to increase the collection. The fortunes of this library were various and singular. It was transported to Persia by Xerxes, brought back by Seleucus Nicator, plundered by Sylla, and at last restored by the Emperor Hadrian. On the invasion of the Roman Empire by the Goths, Greece was ravaged; and on the sack of Athens, they had collected all the libraries, and were upon the point of setting fire to this funeral pile of ancient learning, when one of their chiefs interposed, and dissuaded them from their design, observing, at the same time, that as long as the Greeks were addicted to the study of books they would never apply themselves to that of arms.

The first library established at Rome was that founded by Paulus Emilius, in the year B.C. 167. Having subdued Perses, king of Macedonia, he enriched the city of Rome with the library of the conquered monarch, which was subsequently augmented by Sylla. On his return from Asia, where he had successfully terminated the first war against Mithridates, Sylla visited Athens, whence he took with him the library of Apellicon the Teian, in which were the works of Aristotle and Theophrastus. Lucullus, another conqueror of Mithridates, was not less distinguished by his taste for books. The number of volumes in his library was immense, and they were written in the most distinct and elegant manner.

But the use which he made of his collection was still more honourable to that princely Roman than the acquisition or possession of it. 'It was a library,' says Plutarch, 'whose walls, galleries, and cabinets were open to all visitors; and the ingenious Greeks, when at leisure, resorted to this abode of the Muses, to hold literary conversations, in which Lucullus himself loved to join.' But although both Sylla and Lucullus liberally gave public access to their literary treasures, still their libraries can in strictness be considered as only *private* collections. Among the various projects which Julius Cæsar had formed for the embellishment of Rome was that of a *public* library, which should contain the largest possible collection of Greek and Latin works; and he had assigned to Varro the duty of selecting and arranging them. But this design was frustrated by the assassination of the dictator, and the establishment of public libraries did not take place in Rome until the reign of Augustus.

The honour of having first established these valuable institutions is ascribed by the elder Pliny to Asinius Pollio, who erected a public library in the Court of Liberty, on the Aventine Hill. The credit which he gained thereby was so great, that the emperors became ambitious to illustrate their reigns by the foundation of libraries, many of which they called after their own names. Augustus was himself an author, and in one of those sumptuous buildings called *Thermæ*, ornamented with porticos, galleries, and statues, with shady walks and refreshing baths, he testified his love of literature by adding a magnificent library, which he fondly called by the name of his sister Octavia. The Palatine Library, formed by the same emperor in the Temple of Apollo, became the haunt of the poets, as Horace, Juvenal, and Perseus, have commemorated. There were deposited the corrected books of the Sybils; and from two ancient inscriptions, quoted by Lipsius and Pitiscus, it would seem that it consisted of two distinct collections—one Greek, and the other Latin. This library having survived the various revolutions of the Roman Empire, existed until the time of Gregory the Great, whose mistaken zeal led him to order all the writings of the ancients to be destroyed. The successors of Augustus, though they did not equally encourage learning, were not altogether neglectful of its interests. Suetonius informs us that Tiberius founded a library in the new Temple of Apollo; and we learn from some incidental notices that he instituted another, called the Tiberian, in his own house, consisting chiefly of works relating to the empire and the acts of its sovereigns. Vespasian, following the example of his predecessors, established a library in the Temple of Peace, which he erected after the burning of the city by order of Nero; and even Domitian, in the commencement of his reign, restored at great expense the libraries which had been destroyed by the conflagration, collecting copies of books from every quarter, and sending persons to Alexandria to transcribe volumes in that celebrated collection, or to correct copies which had been made elsewhere. But the most magnificent of all the libraries founded by the sovereigns of imperial Rome was that of the emperor Ulpius Trajanus, from whom it was denominated the Ulpian Library. It was erected in Trajan's Forum, but afterwards removed to the Viminal Hill, to ornament the baths of Diocletian. In this library [illegible] deposited the elephantine books, written upon tablets of ivory, [illegible] were recorded the transactions of the emperors, the proceedings

of the senate and Roman magistrates, and the affairs of the provinces. It has been conjectured that the Ulpian Library consisted of both Greek and Latin works; and some authors affirm, that Trajan commanded that all the books found in the cities he had conquered should be immediately conveyed to Rome, in order to increase his collection. The library of Domitian having been consumed by lightning in the reign of Commodus, was not restored until the time of Gordian, who rebuilt the edifice, and founded a new library, adding thereto the collection of books bequeathed to him by Quintus Serenus Samonicus, the physician, and amounting, it is said, to no fewer than 72,000 volumes.

In addition to the imperial libraries, there were others to which the public had access in the principal cities and colonies of the empire. Pliny mentions one which he had founded for the use of his countrymen; and Vopiscus informs us that the Emperor Tacitus caused the historical writings of his illustrious namesake to be deposited in the libraries. The number of calcined volumes which have been excavated from the ruins of Herculaneum and Pompeii would also seem to indicate that collections of books were common in those cities. But the irruptions of the barbarians, who overran and desolated the Western Empire, proved more destructive to the interests of literature than either volcanoes or earthquakes, and soon caused the disappearance of those libraries which, during several centuries, had been multiplied in Italy. Those of the East, however, escaped this devastating torrent; and both Alexandria and Constantinople preserved their literary treasures, until their capture by the Saracens and the Turks, who finally subverted the Eastern Empire.

When Constantine the Great made Byzantium the seat of his empire, he decorated that city with splendid edifices, and called it after his own name. Desirous to make reparation to the Christians for the injuries they had suffered during the reign of his predecessor, he commanded the most diligent search to be made after those books which Diocletian had doomed to destruction; he caused transcripts to be made of such as had escaped the fury of the pagan persecutor; and, having collected others from various quarters, he formed the whole into a library at Constantinople. At the death of Constantine, however, the number of books in the imperial library was only 6900; but it was successively enlarged by the Emperors Julian and Theodosius the younger, who augmented it to 120,000 volumes. Of these more than half were burned during the seventh century, by command of the Emperor Leo III., who thus sought to destroy all the monuments that might be quoted in proof respecting his opposition to the worship of images. In this library was deposited the only authentic copy of the proceedings of the Council at Nice; and it is also said to have contained the poems of Homer written in gold letters, together with a magnificent copy of the Four Gospels, bound in plates of gold, enriched with precious stones, all of which perished in the conflagration. The convulsions which distracted the lower empire were by no means favourable to the interests of literature. In the eleventh century learning flourished for a short time during the reign of Constantine Porphyrogennetus; and this emperor is said to have employed many learned Greeks in collecting books, and forming a library, the arrangement of which he himself superintended. But the final subversion of the Eastern Empire, and the capture

of Constantinople in 1453, dispersed the literati of Greece over western Europe, and placed the literary remains of that capital at the mercy of the conqueror. The imperial library, however, was preserved by the express command of Mohammed, and continued, it is said, to be kept in some apartments of the seraglio; but whether it was sacrificed in a fit of devotion by Amurath IV., as is commonly supposed, or whether it was suffered to fall into decay from ignorance and neglect, it is now certain that the library of the sultan contains only Turkish and Arabic writings, and not a single Greek or Latin manuscript of any importance.

Such is a brief survey of the most celebrated libraries of ancient times. Before we proceed to describe those of modern days, we shall offer a few remarks on the extent of ancient as compared with modern collections of books. The National Library of Paris contains upwards of 824,000 volumes, and is the largest in existence. It will be easy to prove that it is the largest that ever has existed.

The number of writers, and consequently of books, in the bright days of Egypt, Greece, and Rome, could not have been very great. It must, on the contrary, have been limited by various causes, which contributed powerfully to retard the composition of new works, and prevent the multiplication of new editions. In fact, the histories of cities and of nations, together with descriptions of the earth, which have become exhaustless sources for the writers of modern times, must have been but sterile themes at a period in which history was confined within the limits of a few centuries, and hardly a sixth part of the world now known had been discovered. Add to these considerations the difficulties of communication, by which the inhabitants of different countries, and often those of different sections of the same country, were kept apart, together with the number of arts and sciences which were either wholly unknown, or confined within very narrow bounds, and it will become evident, that for every thirty or forty authors of the present day, ancient Europe could hardly have supported one or two.

Another circumstance which may be adduced in support of our proposition, is the fact, that an increase in the number of readers leads to a proportionate augmentation in the number of works prepared for their gratification. We have every reason to suppose that the reading class of the ancient world was small in comparison with that of the modern. Even setting aside the circumstance of the narrow limits by which the creative literature of ancient Europe was bounded—Greece and Rome being almost the only nations whence new productions were derived—we shall still be constrained to acknowledge the vast distance which separates the creative literary power of modern from that of ancient times. Our schools, which abound with such a variety of class-books upon every subject, bear little or no resemblance to those of Greece and Rome; nor can the text-books prepared for our universities be brought into comparison with the oral instructions of the old philosophers. Passing by, also, the subjects which have been opened to our research by the discoveries of modern science, and confining our attention to the single branch of philosophy, in the old sense of the word, which has always been more or less studied and disputed upon since the days of the earliest Greeks, we shall probably find

that the productions of any one modern school outnumber those of the whole body of Greek philosophers. How much more would the balance lean towards the moderns were we to add all the varieties of the French, German, English, and Scottish schools, to say nothing of those whose tenacious subtleties have procured them the name of schoolmen! If, going a step further, we consider that reading, which the peculiar cast of modern civilisation has classed among the luxuries of life, is one of those luxuries, in the enjoyment of which all classes come in for a share, we shall find here also a wide distinction between ancient times and our own. During that epoch of splendid decay, in which the immense wealth of the Roman senators was found insufficient to satisfy the longing for new forms of stimulant and of pleasure, their reading, as we are told by Ammianus Marcellinus, a contemporary historian, was confined to the writings of Marius Maximus and Juvenal. What would they not have given for a modern novel, or to what unlimited extent would the imagination have poured forth its fantastic creations had the art of printing been at hand to keep pace with the productive powers of the mind, and the cravings of a morbid intellect? On every score, therefore, the numerical difference between the intellectual wealth of ancient and of modern Europe must have been decidedly in favour of the latter.

The high price of the materials for writing, and the difficulty of procuring them, must also have been a great obstacle to the multiplication of books. When copies could only be procured by the slow and expensive process of transcription, it seems impossible to suppose that a large number could have been usually prepared of any ordinary work. Those of our readers who are aware that only about 450 copies of the celebrated *Princeps* editions were struck off, will readily assent to the correctness of this opinion. The barbarous system of ancient warfare must have also caused the destruction of a great many works, raised the price of others, and rendered extremely difficult—not to say impossible—the accumulation of a very large number in any one place. The difficulties which the bibliomaniacs of our own times encounter in procuring copies of the editions of the fifteenth century, and the extravagant prices at which some of them have been sold, are enough to show how small a part of an entire edition has been able to pass safely through the short space of four centuries. How few copies, then, of a work written in the time of Alexander could have reached the age of Augustus or of Trajan! With facts like these before us, how can we talk of libraries of 700,000 or 800,000 volumes in the ancient world? When we find it so difficult at the present day, in spite of the testimony of intelligent travellers, and of all the advantages we possess for making our estimates, to ascertain the truth with regard to the great libraries of modern Europe, how can we give credit to the contradictory and exaggerated statements which were promulgated in ages of the darkest ignorance concerning ancient Rome and Alexandria? 'After an attentive examination of this subject,' says that eminent bibliographer M. Balbi, 'it seems to me improbable, if I should not rather say impossible, that any library of ancient Europe, or of the middle ages, could have contained more than 300,000 or 400,000 volumes.'

But even allowing 700,000 volumes to the largest of the Alexandrian libraries—that, namely, of which a great part was accidentally destroyed

during the wars of Julius Cæsar—allowing the same number to the library of Tripoli, and to that of Cairo; and admitting that the third library of Alexandria contained 600,000 volumes, and the Ulpian of Rome, and the Cordovan founded by Al-Hakem, an equal number—it will still be easy to show that the whole amount of one of these was not equal to even a fifth part of a library composed of printed books.

Every one who has had anything to do with publication, is well aware of the great difference between the space occupied by the written and that filled by the printed letters. It is well known that the volumes of ancient libraries consisted of rolls, which generally were written only on one side. Thus the written surface of one of these volumes would correspond to but half the written surface of one of our books, of which every page is covered with letters. A library, then, composed of 100,000 rolls would contain no more matter than one of our libraries composed of 50,000 manuscripts. It is well known, also, that a work was divided into as many rolls as the books which it contained. Thus the Natural History of Pliny, which in the *Princeps* edition of Venice forms but one folio volume, would, since it is divided into thirty-seven books, have formed thirty-seven rolls or volumes. If it were possible to compare elements of so different a nature, we should say that these rolls might be compared to the sheets of our newspapers, or to the numbers of our weekly serials. What would become of the great library of Paris were we to suppose its 824,000 volumes in folio, quarto, &c. to be but so many numbers of five or six sheets each? Yet this is the rule by which we ought to estimate the literary wealth of the great libraries of ancient times; and 'hence,' says M. Balbi, 'notwithstanding the imposing array of authorities which can be brought against us, we must persist in believing that no library of antiquity, or of the middle ages, can be considered as equivalent to a modern one of 100,000 or 110,000 volumes.'

No one of the libraries of the first class now in existence dates beyond the fifteenth century. The Vatican, the origin of which has been frequently carried back to the days of St Hilarius in 465, cannot with any propriety be said to have deserved the name of library before the reign of Pope Martin V., by whose order it was removed in 1417 from Avignon to Rome. And even then a strict attention to exactitude would require us to withhold from it this title until the period of its final organization by Nicholas V. in 1447. It is difficult to speak with certainty concerning the libraries, whether public or private, supposed to have existed previous to the fifteenth century, both on account of the doubtful authority and indefiniteness of the passages in which they are mentioned, and the custom which so readily obtained in those dark ages of dignifying with the name of library every petty collection of insignificant codices. But many libraries of the fifteenth century being in existence, and others having been preserved long enough to make them the subject of historical inquiry before their dissolution, it becomes easier to fix with satisfactory accuracy the date of their foundation. We find, accordingly, that during the fifteenth century ten libraries were formed: the Vatican at Rome, the Laurentian at Florence, the Imperial of Vienna and Ratisbon, the University at Turin, the Malatestiana at Cesena, the Marciana at Venice, the Bodleian at

Oxford, the University at Copenhagen, and the City at Frankfort on the Maine. The Palatine of Heidelberg was founded in 1390, dispersed in 1623, restored in 1652, and augmented in 1816.

The increase of the libraries of Europe has generally been slowly progressive, although there have been periods of sudden augmentation in nearly all of them. They began with a small number of manuscripts; sometimes with a few, and often without any printed works. To these gradual accessions were made from the different sources which have always been more or less at the command of sovereigns and nobles. In 1455 the Vatican contained 5000 manuscripts. In 1685, after an interval of more than two centuries, the number of its manuscripts had only risen to 16,000, and that of the printed volumes did not exceed 25,000. In 1789, but little more than a century later, the number of manuscripts had been doubled, and the printed volumes amounted to 40,000.

Far different was the progress of the Royal, or as it is now called, the National Library of Paris. The origin of this institution is placed in the year 1595—the date of its removal from Fontainebleau to Paris by order of Henry IV. In 1660 it contained only 1435 printed volumes. In the course of the following year this number was raised to 16,746, both printed volumes and manuscripts. During the ensuing eight years the library was nearly doubled; and before the close of the subsequent century, it was supposed to have been augmented by upwards of 100,000 volumes.

In most cases the chief sources of these augmentations have been individual legacies and the purchase of private collections. Private libraries, as our readers are doubtless well aware, began to be formed long before public ones were thought of. Like these, they have their origin in the taste, or caprice, or necessities of their founders, and are of more or less value, as one or the other of these motives has presided over their formation. But when formed by private students with a view to bring together all that has been written upon some single branch of science, or by amateurs skilled in the principles of bibliography, they become more satisfactory and complete than they could possibly be made under any other circumstances. Few of them, however, are preserved long after the death of the original collector; but falling into the hands of heirs possessed of different tastes and feelings, are either sold off by auction, or restored to the shelves of the bookseller. It was by availing themselves of such opportunities that the directors of the public libraries of Europe made their most important acquisitions. This is, in short, the history of the Imperial Library of Vienna; and it can hardly be necessary to add, that it was thus that the rarest and most valuable portions of that collection were brought together.* It was thus, also, that the Vatican acquired, some twenty years ago, by the purchase of the library of Count Cicognara, a body of materials illustrative of the history of the arts, which leaves comparatively little to be wished for by the most diligent historian.

It can hardly be necessary to enlarge upon this subject. Every one who has engaged, even in a small degree, in historical researches, must have

* One of the most remarkable of these purchases was that made of the private library of the Prince Eugene, for a life-income of 10,000 florins. It was composed of 15,000 printed volumes, 337 manuscripts, 290 folio volumes of prints, and 215 portfolios or boxes.

observed how soon he gets out of the track of common readers, and how dark and difficult his way becomes, unless he chance to meet with some guide among those who, confining their attention to a single branch of study, have become familiar with, and gathered around them almost everything which can serve to throw light upon it. And when a public institution has gone on through a long course of years adding to the works derived from other sources these carefully chosen stores of the learned, it is easy to conceive how much it must contribute not merely towards the gratification of literary curiosity, but to the actual progress of literature.

From these general considerations respecting modern libraries, we proceed to give some particulars which may serve to convey an idea of the history, character, and contents of the principal book-collections now in existence; and with this view, as well as for convenient reference, we shall arrange them under the respective heads of *British Libraries*, and *Foreign Libraries*.

BRITISH LIBRARIES.

1. *British Museum Library, London.*—There is probably no other public institution in Great Britain which is regarded with so great and general interest as the British Museum. By the variety of its departments, this splendid national depository of literature, and objects of natural history and antiquities, meets in some way the particular taste of almost every class of society. The department of Natural History, in its three divisions of Zoology, Botany, and Mineralogy, contains a collection of specimens unsurpassed, probably unequalled, in the world. The department of antiquities is in some particulars unrivalled for the number and value of the articles it contains. But the library is the crowning glory of the whole. If, in respect to the number of volumes it contains, it does not yet equal the National Library of Paris, the Royal Library of Munich, or the Imperial Library of St Petersburg—in almost every other respect, such as the value and usefulness of the books, the arrangements for their convenient and safe keeping, and, in fact, in every matter pertaining to its internal arrangements, the library of the British Museum, by the concurrent testimony of competent witnesses from various countries, must take rank above all similar institutions in the world. Well may the people of this country regard the Museum with pride and pleasure. The liberal grants of parliament, and the munificent bequests of individuals, are sure indications of a strong desire and purpose to continue and extend its advantages.

Some idea of the magnitude of the Museum, and of its vast resources, may be formed by considering that the buildings alone in which this great collection is deposited have cost, since the year 1823, nearly £700,000; and the whole expenditure for purchases, exclusive of the cost of the buildings just named, is considerably more than £1,100,000. Besides this liberal outlay by the British government, there have been numerous magnificent bequests from individuals. The acquisitions from private munificence were estimated, for the twelve years preceding 1835, at not less than £400,000. The latest considerable bequest was that of the Right Hon. Thomas Grenville: his library, which he gave to the Museum entire, was valued at £50,000. The annual receipts of the institution of

late years, from parliamentary grants and the interest of private legacies, have been about £50,000. The number of visitors to the Museum is immense. In the year 1848 they amounted to 897,985, being an average of about 3000 visitors per day for every day the Museum is open. On special occasions there have been as many as 30,000 visitors on a single day.

This noble institution may be said to have originated in the bequest of Sir Hans Sloane, who, dying in 1752, left his immense collections of every kind to the nation, on the condition of paying £20,000 in legacies to different individuals; a sum considerably less than the intrinsic value of the medals, coins, gems, and precious metals of his museum. This bequest included a library of 50,000 volumes, among which were 3566 volumes of manuscripts in different languages; a herbarium of 334 volumes; other objects of natural history, to the number of six-and-thirty or forty thousand, and the house at Chiswick, in which the whole was deposited. The Harleian collection of manuscripts, amounting to 7600 volumes, chiefly relating to the history of England, and including, among many other curious documents, 40,000 ancient charters and rolls, being about the same time offered for sale, parliament voted a sum of £40,000, to be raised by lottery, and vested in trustees, for the establishment of a National Museum. Of this money, £20,000 were paid to the legatees of Sir Hans Sloane, £10,000 were given for the Harleian Manuscripts, and £10,000 for Montague House as a receptacle for the whole. Sloane's Museum was removed thither with the consent of his trustees. In 1757 George II., by an instrument under the great seal, added the library of the kings of England, the printed books of which had been collected from the time of Henry VII., the manuscripts from a much earlier date. This collection was very rich in the prevailing literature of different periods, and it included, amongst others, the libraries of Archbishop Cranmer, and of the celebrated scholar Isaac Casaubon. His majesty annexed to his gift the privilege which the royal library had acquired in the reign of Queen Anne, of being supplied with a copy of every publication entered at Stationers' Hall; and in 1759 the British Museum was opened to the public.*

The value of the library has been greatly enhanced by magnificent donations, and by immense parliamentary purchases. In 1763 George III. enriched it with a collection of pamphlets and periodical papers, published in England between 1640 and 1660, and chiefly illustrative of the civil wars in the time of Charles I., by whom the collection was commenced. Among other valuable acquisitions may be mentioned Garrick's collection of old English plays, Mr Thomas Tyrwhitt's library, Sir William Musgrave's collection of biography, the general library of the Rev. C. M. Cracherode, the libraries of M. Ginguené, Baron de Moll, Dr Burney, and Sir R. C. Hoare; and above all, the bequest of Major Arthur Edwards, who left to it his noble library, and £7000 as a fund for the purchase of books. Four separate collections of tracts, illustrative of the revolutionary history of France, have been purchased at different times by the trustees, in the exercise of the powers with which they are invested. One of these was

* For a detailed account of, and guide-book to, the treasures of this great national collection, see 'The British Museum, Historical and Descriptive, with Numerous Engravings,' recently published by W. and R. Chambers.

the collection formed by the last president of the parliament of Bretagne, at the commencement of the revolution; two others extended generally throughout the whole revolutionary period; and the fourth consisted of a collection of tracts, published during the reign of the Hundred Days in 1815—forming altogether a body of materials for the history of the revolution as complete in regard to France as the collection of pamphlets and tracts already mentioned is with respect to the civil wars of England in the time of Charles I. Another feature of the Museum Library is its progressive collection of newspapers, from the appearance of the first of these publications in 1588. Sir Hans Sloane had formed a great collection for his day. But to this was added, in 1818, the Burney collection, purchased at the estimated value of £1000; and since that period the Commissioners of Stamps have continued regularly to forward to the Museum copies of all newspapers deposited by the publishers in their office.

In 1823, the Royal Library collected by George III. was presented to the British nation by his successor George IV., and ordered by parliament to be added to the library of the British Museum, but to be kept for ever separate from the other books in that institution. The general plan of its formation appears to have been determined on by George III. soon after his accession to the throne; and the first extensive purchase made for it was that of the library of Mr Joseph Smith, British consul at Venice, in 1762, for which his majesty paid about £10,000. In 1768 Mr (afterwards Sir Frederick) Barnard, the librarian, was despatched to the continent by his majesty; and as the Jesuits' houses were then being suppressed and their libraries sold throughout Europe, he was enabled to purchase, upon the most advantageous terms, a great number of very valuable books, including some very remarkable rarities, in France, Italy, and Germany. Under the judicious directions of Mr Barnard, the entire collection was formed and arranged; it was enlarged during a period of sixty years, by an annual expenditure of about £2000, and it is in itself perhaps one of the most complete libraries of its extent that was ever formed. It contains selections of the rarest kind, particularly of scarce books which appeared in the first ages of the art of printing. It is rich in early editions of the classics, in books from the press of Caxton, in English history, and in Italian, French, and Spanish literature; and there is likewise a very extensive collection of geography and topography, and of the transactions of learned academies. The number of books in this library is 65,250, exclusively of a very numerous assortment of pamphlets; and it appears to have cost, in direct outlay, about £130,000, but it is estimated as worth at least £200,000.

The nucleus of the department of manuscripts at the British Museum was formed by the Harleian, Sloanean, and Cottonian collections. To these George II. added, in 1757, the manuscripts of the ancient royal library of England. Of these one of the most remarkable is the 'Codex Alexandrinus;' a present from Cyril, patriarch of Constantinople, to King Charles I. It is in four quarto volumes, written upon fine vellum, probably between the fourth and sixth centuries, and is believed to be the most ancient manuscript of the Greek Bible now extant. Many of the other manuscripts came into the royal collection at the time when the monastic institutions of Britain were destroyed; and some of them still retain upon their spare

leaves the honest and hearty anathemas which the donors denounced against those who should alienate or remove the respective volumes from the places in which they had been originally deposited. This collection abounds in old scholastic divinity, and possesses many volumes, embellished by the most expert illuminators of different countries, in a succession of periods down to the sixteenth century. In it are also preserved an assemblage of the domestic music-books of Henry VIII., and the 'Basilicon Doron' of James I. in his own handwriting. The Cottonian collection, which was purchased for the use of the public in 1701, and annexed by statute to the British Museum in 1753, consists of 861 manuscript volumes, including 'Madox's Collections on the Exchequer,' in ninety-four volumes, besides many precious documents connected with our domestic and foreign history about the time of Elizabeth and James. It likewise contains numerous registers of English monasteries; a rich collection of royal and other original letters; and the manuscript called the 'Durham Book,' being a copy of the Latin Gospels, with an interlinear Saxon gloss, written about the year 800, illuminated in the most elaborate style of the Anglo-Saxons, and believed to have once belonged to the venerable Bede. The Harleian collection is still more miscellaneous, though historical literature in all its branches forms one of its principal features. It is particularly rich in heraldic and genealogical manuscripts; in parliamentary and legal proceedings; in ancient records and abbey registers; in manuscripts of the classics, amongst which is one of the earliest known of Homer's 'Odyssey;' in missals, antiphonars, and other service-books of the Catholic Church; and in ancient English poetry. It possesses two very early copies of the Latin Gospels, written in gold letters; and also contains a large number of splendidly illuminated manuscripts, besides an extensive mass of correspondence. It further includes about three hundred manuscript Bibles or Biblical books, in Hebrew, Chaldaic, Greek, Arabic, and Latin; nearly two hundred volumes of writings of the fathers of the church; and a number of works on the arts and sciences, among which is a tract on the steam-engine, with plans, diagrams, and calculations by Sir Samuel Morland. The Sloanean collection consists principally of manuscripts on natural history, voyages and travels, on the arts, and especially on medicine.

In 1807 the collection of manuscripts formed by the first Marquis of Lansdowne was added to these libraries, having been purchased by parliament for £4925. It consists of 1352 volumes, of which 114 are Lord Burleigh's state papers, 46 Sir Julius Cæsar's collections respecting the reigns of Elizabeth and James I., and 108 the historical collections of Bishop Kennet. Other valuable collections are the classical manuscripts of Dr Charles Burney, the Oriental manuscripts collected by Messrs Rich and Hull, and the Egyptian papyri presented by Sir J. G. Wilkinson. It would be endless, however, to enumerate these treasures; we have indicated enough to convince our readers that the library of the British Museum is worthy of the nation to which it belongs.

2. *Bodleian Library, Oxford.*—This institution, so called from the name of its illustrious founder, was established towards the close of the reign of Elizabeth by Sir Thomas Bodley, who, having become disgusted with some court intrigues, resigned all his employments about the year 1597, and resolved to spend the remainder of his life in a private station. Having

thought of various plans to render himself useful, he says, 'I concluded at the last to set up my staff at the library door in Oxon, being thoroughly persuaded that in my solitude and surcease from the commonwealth affairs, I could not busy myself to better purpose than by reducing that place, which then in every part lay ruined and waste, to the public use of students. For the effecting whereof I found myself furnished in a competent proportion of such four kinds of aids, as, unless I had them all, there was no hope of good success. For without some kind of knowledge, as well in the learned and modern tongues as in sundry other sorts of scholastical literature; without some purse-ability to go through with the charge; without great store of honourable friends to further the design; and without special good leisure to follow such a work, it could but have proved a vain attempt and inconsiderate.' Having set himself this task—'a task,' as his friend Camden justly says, 'that would have suited the character of a crowned head'—Bodley despatched from London a letter to the vice-chancellor, offering not only to restore the building, but to provide a fund for the purchase of books, and the maintenance of proper officers. This offer being thankfully accepted, he commenced his undertaking by presenting to the library a large collection of books purchased on the continent, and valued at £10,000. He also collected 1294 rare manuscripts, which were afterwards increased to 6818, independently of 1898 in the Ashmolean Museum. Other collections and contributions were also, by his example and persuasion, presented to the new library; and the additions thus made soon swelled to such an amount that the old building was no longer sufficient to contain them. The edifice was accordingly enlarged; and Bodley thus had the proud satisfaction of seeing Oxford possessed, by his means, of such a library as might well bear comparison with the proudest in continental Europe. It would require a volume to contain an enumeration of the many important additions which have been made to this library by its numerous benefactors, or to admit even a sketch of its ample contents in almost every branch of literature and science. The Oriental manuscripts are the rarest and most beautiful to be found in any European collection; and the first editions of the classics, procured from the Pinelli and Crevenna libraries, rival those of Vienna. In a word, it is exceedingly rich in many departments in which most other libraries are deficient, and it forms altogether one of the noblest collections of which any university can boast.

3. *University Library, Cambridge.*—This is a library of considerable extent, and contains much that is valuable or curious both in the department of printed books and in that of manuscripts. The printed books comprise a fine series of *editiones principes* of the classics, and a very large proportion of the productions of Caxton's press. Among the manuscripts contained in it are the celebrated manuscript of the four Gospels and Acts of the Apostles, known by the name of the *Codex Bezæ*, which was presented to the university by that distinguished reformer; Magna Charta, written on vellum; and a Koran upon cotton paper, superbly executed. In the library of Trinity College, Cambridge, there are several exceedingly interesting literary curiosities; amongst others, some manuscripts in the handwriting of Milton, consisting of the original copy of the 'Masque of Comus,' several plans of 'Paradise Lost,' and the poems of 'Lycidas,'

'Arcades,' and others; and also Sir Isaac Newton's copy of his 'Principia,' with his manuscript notes, and his letters to Roger Coles.

4. *Advocates' Library, Edinburgh.*—This library was founded in 1682, at the instance of Sir George Mackenzie of Rosehaugh, who was at that time Dean of Faculty, and the plan was carried into execution on a small scale, by a fund which had been formed out of the fines of members. It was originally intended that it should consist merely of the works of lawyers, and of such other books as were calculated to advance the study of jurisprudence; it now comprehends, in a greater or less degree, almost every branch of science, philosophy, jurisprudence, literature, and the arts. Its collection of historical works is very complete. Among the curiosities shown to visitors are a manuscript Bible of St Jerome's translation, believed to have been written in the eleventh century, and known to have been used as the conventual copy of the Scriptures in the Abbey of Dunfermline; a copy of the first printed Bible, in two volumes, from the press of Faust and Guttenberg; the original Solemn League and Covenant, drawn up in 1580; and six copies of the Covenant of 1638. Among other manuscripts in the collection are the whole of the celebrated Wodrow Manuscripts, relating to the ecclesiastical history of Scotland, and the chartularies of many of the ancient religious houses. For its extent, no less than for the liberal principles upon which it is conducted, this deserves the name of the National Library of Scotland.

5. *Trinity College Library, Dublin.*—This library owed its establishment to a very curious incident. In the year 1603, the Spaniards were defeated by the English at the battle of Kinsale; determined to commemorate their victory by some permanent monument, the soldiers collected among themselves the sum of £1800, which they agreed to apply to the purchase of books for a public library, to be founded in the then infant institution of Trinity College. This sum was placed in the hands of the celebrated Dr Usher, who immediately proceeded to London, and there purchased the books necessary for the purpose. It is a remarkable coincidence, that Usher, while occupied in purchasing these books, met in London Sir Thomas Bodley engaged in similar business, with a view to the establishment of his famous library at Oxford. From this commencement, the library of Trinity College was, at different periods increased by many valuable donations, including that of Usher's own collection, consisting of 10,000 volumes, until at length its growing magnitude requiring a corresponding increase of accommodation, the present library-hall, a magnificent apartment of stately dimensions, was erected in the year 1732. Since that time numerous additions have been made to the library; amongst others, that of the library of the Pensionary Fagel, in 20,000 volumes, and the valuable classical and Italian books which had belonged to Mr Quin; so that, altogether, the library of Trinity College now forms one of the first order, at least in this country.

The five libraries thus briefly described are the principal ones in the United Kingdom, and they are all entitled to receive a copy of every new work on its publication; so that they are continually on the increase, and enabled to keep pace with the activity of the press. Of the numerous other libraries of this country we have no space to give a detailed account,

and must therefore content ourselves with merely indicating the names of the more extensive ones. In London are the libraries of the Royal Society and the Royal Institution; Sion College Library; Archbishop Tenison's Library; and Dr Williams's Library, belonging to the Dissenters. The Lambeth Library of the Archbishop of Canterbury is exceedingly rich in ecclesiastical history and biblical literature. At Oxford and Cambridge, all the different colleges have libraries more or less extensive and valuable. Chetham's Library at Manchester is also worthy of mention. The library of the Writers to the Signet at Edinburgh is an excellent and valuable miscellaneous collection of books in science, law, history, geography, statistics, antiquities, literature, and the arts. Finally, the Scotch universities of Edinburgh, Glasgow, St Andrews, and Aberdeen, all possess academical libraries of considerable size, and which are steadily on the increase. Many of the above receive an annual grant of money from government, as a compensation for the withdrawal of the privilege of receiving copies of every book published in the kingdom. All such, at least, ought to be thrown open to the public, and doubtless soon will be.

FOREIGN LIBRARIES.

1. *National Library, Paris.*—This library is justly considered as the finest in Europe. It was commenced under the reign of King John, who possessed only *ten* volumes, to which 900 were added by Charles V., many of them superbly illuminated by John of Bruges, the best artist in miniatures of that time. Under Francis I. it had increased to 1890 volumes, and under Louis XIII. to 16,746. In 1684 it possessed 50,542 volumes; in 1775 it amounted to above 150,000; and by 1790 it had increased to about 200,000. At present it contains 824,000 volumes of printed books, and 80,000 manuscripts. It is divided into four departments:—1. Printed books; 2. Manuscripts, charters, and diplomas; 3. Coins, medals, engraved stones, and other antique monuments; and 4. Engravings, including geographical charts and plans. Of the contents of this magnificent, nay, matchless collection, it would far exceed our limits to give any details, or even to enumerate its choicest articles. It is rich in every branch and department, unique in some, scarcely surpassed in any, and unrivalled in all taken together. Of books printed on vellum it contains at once the finest and most extensive collection in the world.

2. *Arsenal Library, Paris.*—This library, founded by the Marquis de Paulmy, formerly ambassador of France in Poland, was in 1781 acquired by the Count d'Artois, who united to it nearly the whole of the library of the Duke de la Valliere. It possesses the most complete collection extant of romances, since their origin in modern literature; of theatrical pieces or dramas, from the epoch of the Moralities and Mysteries; and of French poetry since the commencement of the sixteenth century. It is less rich in other branches, but it has all works of importance, and in particular contains historical collections which are not to be found elsewhere.

3. *Library of Ste Genevieve, Paris.*—The foundation of this library dates as early as the year 1624, when Cardinal de Rochefoucauld, having reformed the Abbey of Sainte-Genevieve, made it a present of 600 volumes. At present it contains 160,000 printed volumes and 2000 manuscripts. In it

may be found all the academical collections, and a complete set of Aldines; it is particularly rich in historical works; and its most remarkable manuscripts are Greek and Oriental. Its typographical collections of the fifteenth century are not more valuable for their number than the high state of preservation in which they are found. This library is open of an evening, and is much resorted to by students, and men of the operative classes.

4. *Mazarin Library, Paris.*—This library, as its name denotes, was instituted by Cardinal Mazarin. The formation of it was intrusted to the learned Gabriel Naudé, who, having first selected all that suited his purpose in the booksellers' shops in Paris, travelled into Holland, Italy, Germany, and England, where the letters of recommendation of which he was the bearer enabled him to collect many very rare and curious works. Cardinal Mazarin, by his will, bequeathed it to the college which he founded, and in 1688 it was made public. It is remarkable for a great number of collections containing detached pieces and small treatises, which date as far back as the fifteenth century, and exist nowhere else; nor has any other library so complete a body of the ancient books of law, theology, medicine, and the physical and mathematical sciences. It also possesses a most precious collection of the Lutheran or Protestant authors. In one of the halls are placed models in relief of the Pelasgic monuments of Italy and Greece; in another is a terrestrial globe, eighteen feet in diameter, formed of plates of copper, and executed by order of Louis XVI.; but this instrument, which is unique in Europe, is unfortunately unfinished, being destitute of several requisite circles.

5. *National Library, Madrid.*—This 'is one of the many institutions which awaken the admiration of the stranger in Spain, as being at variance with the pervading decay.' According to Mr Ford, 'it is rich in Spanish literature, especially theology and topography, and has been much increased numerically since the suppression of the convents; but good modern books are needed.' It contains many valuable Greek, Latin, and Arabic manuscripts, and unedited works, chiefly Spanish. The *Monetario*, or cabinet of medals, is arranged in an elegant and beautiful apartment, and contains an unrivalled collection of Celtic, Phœnician, Greek, Roman, Gothic, Arabic, and modern coins and medals, in excellent preservation. The library is open to all, at least as far as the printed books are concerned.

6. *Vatican Library, Rome.*—Among the libraries of Italy, that of the Vatican at Rome stands pre-eminent, not more for its grandeur and magnificence, than for the inestimable treasures with which it is enriched. It was originated about the year 465 by Pope Hilary, and has been augmented by succeeding pontiffs, and by various princes, until it reached its present extent and value. Our space will not permit us to give anything like a detailed account of its treasures; but we condense from Sir George Head's admirable work on Rome the following description of the grand saloon of the library:—'The principal chamber of the library appears to be 179 feet long by 51 broad. The ceiling is remarkable for presenting to the eye the appearance of a uniform extensive surface, as if it were a beautifully broad elliptical vault, though in fact it consists of a double range of groined arches that, springing on each side from the walls, and blending together in the middle, are supported on a row of six pillars planted in a line on the ground. These pillars are contrived, accordingly, of an oblong shape, so

extremely narrow that, planted as they are longitudinally, and encompassed by large rectangular mahogany bookcases to serve as pedestals, they occupy but an inconsiderable space in the apartment when viewed edgewise by a spectator standing at the entrance, and from their form effectually counteract the appearance of weight, that would certainly otherwise be produced by the double vaulting. Moreover, while the lines of curvature slide as it were thus gently and harmoniously into the outline of the pillars, the transition of surface is the less perceptible, owing to the whole of the vault and pillars being painted in a uniform delicate pattern of arabesque, by Zuccari, as it is affirmed; but at all events, in figures of plants and flowers, almost as light and exquisite as the paintings on a china teacup, and thrown into relief by the prevalence of a clear white ground; so that an appearance is produced of airiness and space to all intents and purposes as effective as if the ceiling were really contained within the span of a single elliptical arch. Along the base of the ceiling is a cornice of stucco, ornamented with a light pattern in white and gold; and underneath, upon the upper portion of the walls, are six windows on each side; and the remainder of the surface is covered with paintings by several different artists, one of which represents Sixtus V. receiving from his architect, Dominico Fontana, the plan of the present library. The lower portion of the walls is entirely occupied by closed bookcases, composed of panels of wood painted in arabesque on a ground of white and slate colour, and surrounded by gilded mouldings; which receptacles bear no sort of affinity in appearance to ordinary library furniture, and thoroughly conceal from public view the valuable manuscripts which they contain. No books, in fact, are to be seen in the whole chamber, and particularly the rectangular bookcases above referred to, that serve the purpose of pedestals, from the middle of which each pillar supporting the ceiling and resting on the ground below rise, as the pier of a bridge from its caisson, rather resemble ornamental buffets upon whose tabular surface vases and other splendid objects of art and antiquity are arranged in order.

'With regard to the principal objects worthy of observation there are, in the first place, two very magnificent tables, both alike, placed in the middle of the room in a corresponding position to one another, between the first and second pillar at each extremity. Each is composed of an enormously thick and very highly polished slab of red Oriental granite, supported by six bronze figures of slaves as large as life. Such being the appropriation of two of the intercolumnial spaces, a third is occupied by a low column of Cipollino marble, serving as a pedestal to support a splendid and very large vase of Sevres china, which was presented by the Emperor Napoleon to Pius VII. In a fourth intercolumnial space is to be seen, supported on a pedestal of Cipollino, whose base appears to be a sort of alabaster marked with different shades of olive-green, a square tazza of malachite, presented to Gregory XVI. by the Crown-Prince of Russia, after his visit to Rome in 1838. In the fifth intercolumnial space are a magnificent pair of candelabra of Sevres china, brought by Pius VII. from Paris, and also a splendid vase of the same material presented to his holiness by Charles X. There is also to be observed, placed at the extremity of the room, on the right-hand side near the wall, a spirally-fluted column of Oriental alabaster, which was discovered near the church of St Eusebio, on the Esquiline; and

suspended against the wall, not far distant, is a curious old Russian calendar painted on wood.

'The bookcases being continually locked, as above stated, permission is nevertheless granted to those visitors who may be desirous of consulting the books and manuscripts, on making application to the cardinal-librarian or his assistants; but the privilege is merely nominal, in consequence of the extremely imperfect state of the catalogue; and in point of fact the multitudinous volumes on the shelves may be compared to a mine, unexplored and unexplorable; whence only a few particular objects, considered the staple curiosities of the region, and consequently continually had recourse to by the visitors, are extracted. The volumes in question consist principally of a splendidly-illuminated Bible of the sixth century; the most ancient version of the Septuagint; the earliest Greek version of the New Testament; the "Assertio Septem Sacramentorum," written by Henry VIII.—a royal literary effort in defence of the seven Roman Catholic sacraments that procured the title of Defender of the Faith for the author, which descended to the Protestant monarchs of England; and a most curious and authentic collection of original correspondence between Henry VIII. and Anne Boleyn. The "Assertio Septem Sacramentorum" is a good thick octavo volume, written in Latin, and printed in the year 1501, in London, on vellum. The type is clear, with a broad margin, and at the beginning is the original presentation addressed to Leo X., as follows, subscribed by the royal autograph—

"Anglorum Rex Henricus Leo Decime mittit
Hoc opus, et fidei testis et amicitiæ."

The whole work—in the preface of which the writer descants on his humble talents and his modesty—would seem, as far as I was able to judge by turning over the pages hastily, to be composed in a remarkably clear style, and to abound with naïve phrases and genuine expressions of the king himself, wrought into the mass and substance of a prolix theological dissertation, that no doubt was prepared and digested for the purpose by the divines of the period. With regard to the correspondence with Anne Boleyn, which places the royal author altogether in a different point of view before the public, the latter consists of a considerable number of original letters, of which those written by the king are for the most part in French and the remainder in English, and those of Anne Boleyn written all in French. The documents are all in excellent preservation, and the handwriting perfectly legible; from the difference of the character at the period in question, and owing to the abbreviations, somewhat difficult to decipher; not so much so, however, but that even an unpractised person, with sufficient time and leisure, might make them out without much difficulty. Visitors are relieved from the labour of the experiment; and fair copies, made in a clear round hand, are placed, each copy side by side with the original, and all are stitched together in a portfolio, where they may be perused with the utmost facility. The letters, which to those inclined to ponder on the anatomy of the human heart afford a melancholy moral, are chiefly remarkable for the boisterous eager tone of the king's passion towards his lady-love, which, expressed in terms that would hardly be considered proper now-a-days, verges on the grotesque.'

7. *Casanata Library, Rome.*—This library, founded by Cardinal Girolamo Casanata in the year 1700, is said to contain a greater number of printed books exclusively, in contradistinction to manuscripts, than any other in Rome, not excepting the Vatican. 'The library,' says Sir George Head, 'is a very beautifully-proportioned chamber, upwards of fifty feet in breadth, and long in proportion, with an elliptically-vaulted ceiling, along the base of which are a series of acute-angled arched spaces containing windows that throw an admirable light on the apartment, which is whitewashed most brilliantly. The books are ranged all round the room on open shelves, with a communication to those of the upper row by a pensile gallery that surrounds the whole periphery. At the extremity of the room is a white marble statue, by Le Gros, of Cardinal Casanata, the founder, elevated with remarkably good effect on a pedestal of dark-coloured Brazil-wood, very highly polished, and surmounted by a splendid frontispiece, supported on two pair of fluted Corinthian columns, all of the same material. The door of the room at the entrance is also surmounted by a frontispiece and columns of Brazil-wood, similar to the preceding. The librarian, a Dominican friar, dressed in the habit of his order, and seated in an easy-chair in the middle of the room at his desk of office, attends there continually, and is exceedingly kind and attentive to the applications of strangers who wish to read books in the library, though his good intentions are of little avail, from the want of a proper catalogue.'

8. *Laurentian Library, Florence.*—This institution was commenced by Cosmo de Medici, the father of a line of princes whose name and age are almost synonymous with the restoration of learning. Naturally fond of literature, and anxious to save from destruction the precious remains of classical antiquity, he laid injunctions on all his friends and correspondents, as well as on the missionaries who travelled into remote countries, to search for and procure ancient manuscripts in every language and on every subject. He availed himself of the services of all the learned men of his time; and the situation of the Eastern empire, then daily falling into ruins by the repeated attacks of the Turks, afforded him an opportunity of obtaining many inestimable works in the Hebrew, Greek, Chaldaic, Arabic, and Indian languages. From these beginnings arose the celebrated library of the Medici, which, after having been the constant object of the solicitude of its founder, was after his death further enriched by the attention of his descendants, and particularly of his grandson Lorenzo; and after various vicissitudes of fortune, and frequent and considerable additions, has been preserved to the present day—the noblest monument which its princely founders have left of the glory of their line.

9. *Magliabecchian Library, Florence.*—Antonio Magliabecchi, from being a servant to a dealer in vegetables, raised himself to the honourable office of librarian to the Grand Duke of Tuscany, and became one of the most eminent literary characters of his time. The force of natural talent overcame all the disadvantages of the humble condition in which he had been born, and placed him in a situation to make his name known and respected. But he endeavoured to deserve still better of his countrymen, by presenting them, shortly before his death in 1714, with his large and valuable collection of books, together with the remainder of his fortune, as a fund for its support. This constituted the foundation of the Magliabecchian Library,

which, by the subsequent donations of several benefactors, and the bounty of some of the grand dukes of Florence, has been so much increased both in number and value that it may now vie with some of the most considerable collections in Europe.

10. *Imperial Library, Vienna.*—This collection is perhaps inferior only to that of the Vatican, and the National Library at Paris, for the rarity and value of its contents. It was founded by the Emperor Frederick III., who spared no expense to enrich it with printed books as well as manuscripts in every language. By the munificence of succeeding emperors, numerous important and valuable accessions were made to the collection; amongst which may be mentioned the large and interesting library of Prince Eugene, and a considerable portion of the Buda Library, founded by Matthias Corvinus, king of Hungary. The Imperial Library occupies eight spacious apartments, and a ninth is appropriated to a very valuable collection of medals and other curiosities. Besides the cabinet of medals, there is also attached to the library a superb collection of engravings, consisting of 473 large folio volumes, 510 volumes of different sizes, and 215 folio cartoons. The collection of music contains upwards of 6000 volumes, theoretical and practical; and that of autographs exceeds 8000 pieces, classed under the heads of monarchs and princes, ministers and statesmen, poets, philosophers, and men of learning or science, generals and renowned warriors, artists, musicians, and others.

11. *Royal Library, Munich.*—This is the most extensive collection in Germany. It was founded in 1550, and is very complete in all its departments. The ancient manuscripts relative to the art of music amount to a great number, and are exceedingly curious.

12. *University Library, Gottingen.*—The library attached to the university of Gottingen contains 360,000 printed volumes, and 3000 volumes of manuscripts. But its extent is its least recommendation, for it is not only the most complete among those of the universities, but there are very few royal or public collections in Germany which can rival it in real utility; and if not in Germany, where else? It is not rich in manuscripts, and many other libraries surpass it in typographical rarities, but none contains so great a number of really useful books in almost every branch of human knowledge. This library is mainly indebted for the pre-eminence it has obtained to the labours and exertions of the illustrious Heyne. In the year in which he came to Gottingen as second librarian, the entire control of the library was committed to him, and he became chief. From this moment commenced at once its extension and its improvement. When Heyne went to Gottingen, it already possessed a library of from 50,000 to 60,000 volumes; at his decease it had increased, according to the most moderate computation, to upwards of 200,000 volumes. Nor was this all. At the commencement of his librarianship entire departments of learning were wholly wanting; at its close, not only were these deficiencies supplied, but the library had become proportionally rich in every department, and, in point of completeness, unrivalled. Fortunately, Heyne's place has been filled by worthy successors, and the reputation of the collection is still as great as ever.

13. *Royal Library, Dresden.*—The king of Saxony's library at Dresden contains 300,000 volumes of printed books, and 2800 volumes of manu-

scripts. The valuable library that formerly belonged to Count Beurau forms part of this noble collection, which is most complete in general history, and in Greek and Latin classic authors. Amongst the printed books are some of the rarest specimens of early typography, including 600 of the Aldine editions, and many on vellum, besides a copy of the first edition of the 'Orlando Furioso,' printed by Mazocco, 'coll' assistenza dell'autore,' in 1516, and other rarities. In the department of manuscripts are a Mexican manuscript, written on human skin, containing, according to Thevenot, a calendar, with some fragments of the history of the Incas; the original manuscript of the 'Reveries' of Marshal Saxe, bearing at the end that he had composed this work in thirteen nights during a fever, and completed it in December 1733; a fine copy of the Koran, taken from a Turk by a Saxon officer at the last siege of Vienna, and said to have formerly belonged to Bajazet II.; and a Greek manuscript of the Epistles of St Paul of the eleventh century. An extensive collection of antiquities is preserved in twelve apartments under the library, below which are eighteen vaulted cellars, stored with a vast quantity of valuable porcelain, partly of foreign and partly of Dresden manufacture.

14. *Royal Library, Berlin.*—This collection includes works upon almost all the sciences, and in nearly all languages. Among the manuscripts are several Egyptian deeds, written on papyrus, in the demotic or enchorial character. These are very curious, and *fac similes* of some of them have been published by Professor Kosegarten in his valuable work on the 'Ancient Literature of the Egyptians.'

15. *University Library, Leyden.*—This library was founded by William I., Prince of Orange, and is justly celebrated throughout Europe for the many valuable specimens of Greek and Oriental literature with which it abounds. To it Joseph Scaliger bequeathed his fine collection of Hebrew books; and it was further enriched by the learned Golius, on his return from the East, with many Arabic, Turkish, Persian, and Chaldaic manuscripts. In addition to these it received the collections of Holmanns, and particularly those of Isaac Vossius and Ruhuken—the former containing a number of valuable manuscripts, supposed to have once belonged to Christina, queen of Sweden; and the latter an almost entire series of classical authors, with a collection of manuscripts, perhaps unique, amongst which are copies of several that were consumed by fire in the Abbey of St Germain-des-Prés.

16. *Imperial Library, St Petersburg.*—Russia is indebted for this splendid collection to an act of robbery and spoliation. In 1795, when Russia triumphed over the independence of Poland, the victorious general, Suwaroff, unceremoniously seized the Zaluski Library, of nearly 300,000 volumes, had it packed up in all haste and despatched to St Petersburg. There it formed the basis of the present Imperial Library, which, but for that stolen collection, instead of now ranking in the first class of European libraries, would scarcely have been entitled to a place in the third.

17. *Libraries of Constantinople.*—This city possesses thirty-two public libraries, all varying in extent, but more or less celebrated for the number and value of their manuscripts, which are neatly bound in red, green, or black morocco. The Mohammedans have a peculiar method of indorsing, placing, and preserving their books. Each volume, besides being bound in morocco, is preserved from dust in a case of the same material; and on it,

as well as on the edges of the leaves, the title is written in large and legible characters. The books are placed, one upon another, in presses ornamented with trelliswork, and are disposed along the wall, or in the four corners of the library. All these collections are open to the public throughout the year, excepting on Tuesdays and Fridays: the librarians are as polite and attentive as Turks can be to those whom curiosity or love of study attract thither; and every one is at liberty not merely to peruse, but to make extracts from the books, and even to transcribe them entirely, provided this be done within the walls of the library. Theology, including the Koran and commentators thereon, jurisprudence, medicine, ethics, and history, are the sciences chiefly cultivated by the Osmanlis. The books are all written with the greatest care on the finest vellum, the text of each page is enclosed in a highly-ornamented and gilt framework, the beginning of each chapter or section is splendidly illuminated, and the value of the manuscripts varies in proportion to the beauty of the characters.

We here terminate our rapid survey of the principal libraries of Europe. Small, however, would be the interest which one should feel for these magnificent establishments were they designed solely for the benefit of a few individuals, or of any favoured class. They would still be splendid monuments of the productive powers of the human mind, and of the taste or learning of their founders; but they would have no claims to that unbounded admiration with which we now regard them. There is a republican liberality in the management of the great libraries of the continent of Europe which is well worthy of our imitation. In these alone is the great invention of printing carried out to its full extent, by the free communication of all its productions to every class of society. No introduction, no recommendation, no securities are required; but the stranger and the native are admitted, upon equal terms, to the full enjoyment of all the advantages which the uncontrolled use of books can afford. As this mode of accommodating, or rather of meeting the wants of the public, is the real object of these institutions, they are provided with librarians, who, under different titles corresponding to the duties imposed upon them, receive from government regular salaries proportioned to their rank and to the services which they perform. To these the immediate superintendence of the library is wholly intrusted, and at a stated hour of every day in the week, except of such as are set apart for public or religious festivals, they open the library to the public. There, undisturbed, and supplied with everything the collection contains that can aid him in his studies, the scholar may pass several hours of every day without any expense, and with no other care than that natural attention to the books he uses, which every one capable of appreciating the full value of such privileges will readily give. Nor do his facilities cease here. The time during which the libraries remain open may be insufficient for profound and extensive researches, and the writer who has to trace his facts through a great variety of works, and to examine the unpublished documents to be found in public libraries alone, would be obliged to sacrifice a large portion of every day if his studies were regulated by the usual hours of these institutions. For such persons a proper recommendation can hardly fail to procure the use, at their own houses, of the works they may need. In this

manner the door is thrown open to every one who wishes to enter, and science placed within reach of all who court her favours.

This is as it should be; and it is therefore with great pleasure that we have observed symptoms of improvement in this respect originating in our legislature. In March 1849 a select committee was appointed by the House of Commons, on the motion of Mr William Ewart, to report on the best means of 'extending the establishment of libraries freely open to the public, especially in large towns, in Great Britain and Ireland.' This committee consisted of fifteen members—namely, Mr Ewart, Viscount Ebrington, Mr D'Israeli, Sir Harry Verney, Mr Charteris, Mr Bunbury, Mr G. A. Hamilton, Mr Brotherton, Mr Monckton Milnes, the Lord Advocate (Mr Rutherford), Mr Thicknesse, Sir John Walsh, Mr Mackinnon, Mr Kershaw, and Mr Wyld. These gentlemen seem to have entered upon their labours with zeal, and to have performed their duty with thoroughness and fidelity. They held numerous sessions, and examined a large number of witnesses. The particulars of these examinations have been printed in full, and form a rather bulky blue-book, in which the report of the committee occupies only twelve pages, while the minutes of evidence, tables, &c. fall over three hundred. The committee appear to have felt that it was only necessary to lay before parliament and the public the facts concerning the present condition and wants of the public libraries of this country in order to insure the supply of all deficiencies.

After presenting a brief view of the principal libraries in the various countries of Europe, with a more particular account of the present condition of those in Great Britain, showing that the English are far behind their continental brethren in this respect, the committee thus express their conviction—'Whatever may be our disappointment at the rarity of public libraries in the United Kingdom, we feel satisfaction in stating that the uniform current of the evidence tends to prove the increased qualifications of the people to appreciate and enjoy such institutions. Testimony, showing a great improvement in national habits and manners, is abundantly given in the evidence taken by the committee. That they would be still further improved by the establishment of public libraries, it needs not even the high authority and ample evidence of the witnesses who appeared before the committee to demonstrate.'

Frequent and favourable allusions are made in the report and the minutes of evidence to the numerous popular libraries in this country for district schools, factories, &c. These, we are aware, are of the greatest value; but these alone are not sufficient. The establishment of even a hundred thousand small village or district-school libraries would not supersede the necessity of a certain number of large and comprehensive ones. These little collections are much alike, each containing nearly the same books as every other. The committee of parliament appear to understand this. 'It is evident,' they say, 'that there should be in all countries libraries of two sorts: libraries of deposit and research, and libraries devoted to the general reading and circulation of books. Libraries of deposit should contain, if possible, almost every book that ever has existed. The most insignificant tract, the most trifling essay, a sermon, a newspaper, or a song, may afford an illustration of manners or opinions elucidatory of the past, and throw a faithful though feeble light on the pathway of the future

historian. In such libraries nothing should be rejected. Not but that libraries of deposit and of general reading may (as in the case of the British Museum) be combined. But though such combination is possible, and may be desirable, the distinction which we have drawn should never be forgotten.'

The first, and apparently, in the estimation of the committee, the most important witness, was Edward Edwards, Esq., an assistant in the department of printed books in the British Museum. The minutes of his evidence alone cover between sixty and seventy of the closely-printed folio pages accompanying the report; and besides this, he has furnished various statistical tables, occupying fifty pages, and a series of twelve maps. In one of these maps it is his purpose to exhibit, by various shades, the relative provision of books in public libraries in the principal states of Europe, as compared with their respective populations; and in the others, the local situation of the public libraries in some of the principal cities is indicated. The evidence of Mr Edwards has been severely commented upon in the London papers and elsewhere, and some inaccuracies in his tables, of greater or less magnitude, have been pointed out. We might, perhaps, by a particular examination of every word and figure, add something to the list of errata. But we think that those persons who are most familiar with the difficulty of obtaining exact statistical details will not wonder that an error should here and there be found. We have looked over the evidence and the tables with considerable care, and think them, on the whole, highly creditable to the author. It is evident, however, from the general tenor of his testimony, that Mr Edwards presses rather too strongly the point respecting the condition of England, compared with that of the countries on the continent, as to the number and accessibility of their public libraries. His enthusiasm on the subject, arising probably from a laudable desire to have his own country take a higher rank in respect to libraries than she now holds, has led him, we think, to overlook or undervalue some of the advantages which she already possesses. But his facts and figures are in the main to be relied upon; and we shall make use of them as sufficiently accurate to give our readers a general view of the present bibliothecal condition of the principal countries of Europe.

On Mr Edwards's map of Europe we find the smaller German states to be represented with the lightest lines, indicating the highest rank, and Great Britain with the darkest or lowest. He states the provision of books in libraries publicly accessible, as compared with the population, to be as follows:—In Saxony, for every 100 inhabitants there are 417 books; in Denmark, 412; in Bavaria, 339; in Tuscany, 261; in Prussia, 200; in Austria, 167; in France, 129; in Belgium, 95; whilst in Great Britain there are only 53 to every 100 inhabitants.

In the following tables, the libraries containing fewer than 10,000 volumes each (of which there are, in France alone, at least seventy or eighty) are not taken into the account:—

France	has 107	public libraries,	containing	4,000,000	vols.
Prussia	... 44	...	...	2,400,000	...
Austria	... 48	...	...	2,400,000	
Great Britain	... 33	...	...	1,771,000	
Bavaria	... 17	...	...	1,267,000	
Denmark	... 5	...	...	645,000	...

Saxony	has	6	public libraries, containing	554,000 vols.
Belgium	...	14	... ...	538,000 ...
Tuscany	...	9	... ...	411,000 ...

Taking the capital cities, we find the following results:—

Paris	has	9	public libraries, containing	1,474,000 vols.
Munich	...	2	...	800,000 ...
Copenhagen	...	3	...	557,000 ...
Berlin	...	2	.. ..	530,000 ...
London	...	4	... ...	490,500 ...
Vienna	...	3	.. ...	453,000 ...
Dresden	...	4	... ...	340,500 ...
Florence	..	6	.. ...	318,000 ...
Milan	...	2	... ...	230,000 ...
Brussels	...	2	... ...	143,500 ...

Arranging these libraries according to their extent, or number of printed books, they would stand as follows:—

	Printed Books.	Manuscripts.
Paris (1), National Library,	824,000	80,000 vols.
Munich, Royal Library,	600,000	22,000 ...
St Petersburg, Imperial Library,	446,000	20,650 ...
London, British Museum,	435,000	31,000 ...
Copenhagen, Royal Library,	412,000	3,000 ...
Berlin, Royal Library,	410,000	5,000 ...
Vienna, Imperial Library,	313,000	16,000 ...
Dresden, Royal Library,	300,000	2,800 ...
Wolfenbuttel, Ducal Library,	200,000	4,580 ...
Madrid, National Library,	200,000	2,500 ...
Stuttgard, Royal Library,	187,000	3,300 ...
Paris (2), Arsenal Library,	180,000	6,000 ...
Milan, Brera Library,	170,000	1,000 ...
Darmstadt, Grand Ducal Library,	150,000	4,000 ...
Paris (3), Ste Genevieve Library,	150,000	2,000 ...
Florence, Magliabecchian Library,	150,000	12,000 ...
Naples, Royal Library,	150,000	3,000 ...
Edinburgh, Advocates' Library,	148,000	2,000 ...
Brussels, Royal Library,	133,500	18,000 ...
Rome (1), Casanata Library,	120,000	4,500 ...
Hague, Royal Library,	100,000	2,000 ...
Paris (4), Mazarine Library,	100,000	4,000 ...
Rome (2), Vatican Library,	100,000	24,000 ...
Parma, Ducal Library,	100,000	...

The chief university libraries may be ranked in the following order:—

	Printed Books.	Manuscripts.
Gottingen, University Library,	360,000	3,000 vols.
Breslau, University Library,	250,000	2,300 ...
Oxford, Bodleian Library,	220,000	21,000 ...
Tubingen, University Library,	200,000	1,900 ...
Munich, University Library,	200,000	2,000 ...
Heidelberg, University Library,	200,000	1,300 ...
Cambridge, University Library,	166,724	3,163 ...
Bologna, University Library,	150,000	400 ...
Prague, University Library,	130,000	4,000 ...
Vienna, University Library,	115,000	...
Leipsic, University Library,	112,000	2,500 ...
Copenhagen, University Library,	110,000	...
Turin, University Library,	110,000	2,000 ...
Louvain, University Library,	105,000	246 ...
Dublin, Trinity College Library,	104,239	1,512 ...
Upsal, University Library,	100,000	5,000 ...
Erlangen, University Library,	100,000	1,000 ...
Edinburgh, University Library,	90,354	310 ...

The largest libraries in Great Britain are those of the

	Printed Books.	Manuscripts.
British Museum, London,	435,000	31,000 vols.
Bodleian, Oxford,	220,000	21,000 ...
University, Cambridge,	166,724	3,163 ...
Advocates', Edinburgh,	148,000	2,000 ...
Trinity College, Dublin,	104,239	1,512 ...

There are in the United States of America at least 81 libraries of 5000 volumes and upwards, each to which the public, more or less restrictedly, have access, and of these 49 are immediately connected with colleges or public schools. The aggregate number of volumes in these collections is about 980,413. We subjoin the contents of a few of the largest:—

Harvard College Library,	72,000 vols.
Philadelphia and Loganian Library,	60,000 ...
Boston Athenæum,	50,000 ...
Library of Congress,	50,000 ...
New York Society Library,	32,000 ...
Mercantile Library, New York,	32,000 ...
Georgetown College,	25,000 ...
Brown University,	24,000 ...
New York State Library,	24,000 ...
Yale College,	21,000 ...

America will, however, soon possess a library worthy of its character as a great nation. The Astor Library, now in course of formation, owes its existence to the munificence of John Jacob Astor, who died on the 29th of March 1848, leaving by his will the sum of 400,000 dollars for the establishment of a public library in the city of New York. Seventy-five thousand dollars were to be appropriated to the erection of a suitable building, and 120,000 dollars to the purchase of books as a nucleus. The smallest number of books which the trustees consider it safe to estimate as a basis for enlargement is 100,000 volumes. The Astor Library will probably, when first formed, contain a larger number and a better selection of books than any other in the United States. With the generous provision which the founder has made for its increase, together with the liberal donations which will undoubtedly be made to this as the chief library in the country, it is likely to grow rapidly, till it will take rank with the large libraries of the old world. Under the direction of an enlightened and judicious Board of Trustees, with Washington Irving for president, and Dr Cogswell for superintendent of the institution, there is every reason to believe that the desire so warmly expressed at the conclusion of their report will be fulfilled: 'That the Astor Library may soon become, as a depository of the treasures of literature and science, what the city possessing it is rapidly becoming in commerce and wealth.'

The second witness examined by the committee was M. Guizot. In the distinguished positions which he has filled as minister of public instruction and prime minister in France, his attention has been turned to the public libraries of that country. While in office he ordered an inspection of those institutions, and the French government now has complete and exact documents relative to the number of public libraries, and the number of books in each. These institutions are accessible to the public in every way for reading, and to a great extent for borrowing books. Some

of them receive direct grants from the government towards their support; while others, in the provincial towns, are supported by municipal funds; and to the latter the government distributes copies of costly works, for the publication of which it in general subscribes liberally. M. Guizot attributes the happiest results to this system. He says—'There are two good results: the first is, a general regard in the mind of the public for learning, for literature, and for books. That complete accessibility to the libraries gives to every one, learned or unlearned, a general feeling of good-will for learning and for knowledge; and then the second result is, that the means for acquiring knowledge are given to those persons who are able to employ them.'

His Excellency M. Van de Weyer, the Belgian ambassador, was next examined. He testified that the public libraries in his own country were numerous, large, and easily accessible to all who desire to make use of them. He attributes the best results to the literary character of his country from this privilege of free access to their large collections of books. He thinks the people are better prepared than is generally supposed to appreciate works of a high character. He seems to think it unwise to attempt to popularise science and literature by printing inferior books, written expressly for common and uneducated people. The government subscribe for a number of copies of nearly every valuable work published, by which means they encourage the progress of literature, and are enabled to enrich many of the public collections. 'The government have sometimes, within a space of twenty years, spent some £10,000 or £12,000 in favour of libraries. I take this opportunity of stating also, that though the Chamber only votes a grant of 65,000 or 70,000 francs for the Royal Public Library of Brussels, whenever there is some large sale going on, there is always a special grant made to the library. Lately one of the most curious private libraries had been advertised for sale; a catalogue had been printed in six volumes; the government immediately came forward, bought the whole of the collection for £13,000 or £14,000, and made it an addition to the Royal Library in Brussels; they did the same thing at Ghent: I believe that the library that they bought at Ghent consisted of about 20,000 volumes, and in Brussels about 60,000 or 70,000 volumes.' Our own government would do well to imitate this example more frequently than it has hitherto done.

Passing by several witnesses whose evidence we should be glad to notice did our limits permit, we come to George Dawson, Esq., who, as a lecturer, has had opportunities of becoming acquainted with the condition, the feelings, and the wants of the working-classes in the manufacturing towns both in England and Scotland. He testifies that libraries to some extent have already been formed in those places, and that there is a very general desire among the working-people to avail themselves of more and better books. They can appreciate the best authors. Political and historical subjects interest them most, but the higher class of poetry is also read by them. Milton is much read. Mr Dawson says, 'Shakspeare is known by heart almost. I could produce men who could be cross-examined upon any play.' The contrast between the manufacturing and the farming districts in respect to the intelligence of the people and their desire for improvement is very great. Speaking of one of the agricultural districts,

Mr Dawson says, 'I have heard of a parish in Norfolk where a woman was the parish clerk, because there was not a man in the parish who could read or write!'

Henry Stevens, Esq., formerly librarian of one of the libraries connected with Yale College, gave some valuable information respecting the present state of public libraries in the United States. He says, 'the public libraries of the United States are small but very numerous. We have but two containing above 50,000 volumes, while there are nine above 20,000, forty-three above 10,000, more than a hundred above 5000 volumes, and thousands of smaller ones. The want of large public consulting libraries, like those of Europe, is much felt.' The chief readers in these libraries are the working-classes, and persons who are engaged in active business through the day. Works on physical science, history, biography, and of a superior class, are those chiefly read by them; and Mr Stevens stated, that when he came to England, he could not help being struck by the 'little reading that there is among the labouring and business-classes' of this country as compared with the United States. This is succinctly explained by Mr Dawson, who says, 'the quantity of people who cannot read and write in this country is a very great hindrance to the demand for books. We have *eight millions* who cannot write yet!' Mr Edwards, in his evidence, also points to the same deficiency of elementary education. 'In addition,' he says, 'to the positive want of schooling on the part of large numbers of the population who are now growing up, those who do get some partial education habitually neglect to improve what they get from the want of cultivating a taste for reading. Unless good books are made accessible to the people, this is very likely to continue to be a cause—even where education by Sunday schools, and other efforts of that kind, have been brought within the reach of a considerable number of the population—why the good effects of education have not been continued in after-life.'

The committee very justly place much value on the opinions and suggestions of M. Libri. The thorough knowledge which that eminent bibliographer possesses of all matters pertaining to the condition and wants of public libraries, as well as of the needs of literary men, renders his remarks worthy of careful consideration. In a letter addressed to Mr Ewart, the chairman of the committee, he develops his views at some length, and shows the necessity of having in great countries libraries 'in which one may expect to find, as far as it is possible, all books which learned men—men who occupy themselves upon any subject whatever, and who cultivate one of the branches of human knowledge—may require to consult. Of these there is nothing useless, nothing ought to be neglected; the most insignificant in appearance, those which on their publication have attracted the least attention, sometimes become the source of valuable and unexpected information.' It is in the fragments, now so rare and precious, of some alphabets—of some small grammars published for the use of schools about the middle of the fifteenth century—or in the letters distributed in Germany by the religious bodies commissioned to collect alms, that bibliographers now seek to discover the first processes employed by the inventors of xylography and typography. It is in a forgotten collection of indifferent plates, published at Venice by Faush Verantio towards the end of the sixteenth century, that an engineer who interests himself in the

history of the mechanical arts might find the first diagrams of iron-suspension bridges.

Nothing should be neglected; nothing is useless to whoever wishes thoroughly to study a subject. An astronomer who desires to study the motions peculiar to certain stars requires to consult all the old books of astronomy, and even of astrology, which appear the most replete with error. A chemist, a man who is engaged in the industrial arts, may still consult with profit certain works on alchymy, and even on magic. A legislator, a jurisconsult, needs sometimes to be acquainted with the laws, the ordinances, which derive their origin from the most barbarous ages; but it is particularly for the biographer, for the historian, that it is necessary to prepare the largest field of inquiry, to amass the greatest quantity of materials. This is not only true as regards past times, but we ought to prepare the materials for future students. Historical facts which appear the least important, the most insignificant anecdotes, registered in a pamphlet, mentioned in a placard or in a song, may be connected at a later period in an unforeseen manner with events which acquire great importance, or with men who are distinguished in history by their genius, by their sudden elevation, or even by their crimes. We are not born celebrated—men become so; and when we desire to trace the history of those who have attained it, the inquirer is often obliged to pursue his researches in their most humble beginnings. Who would have imagined that the obscure author of a small pamphlet, 'Le Souper de Beaucaire,' would subsequently become the Emperor Napoleon? and that to write fully the life of the execrable Marat, one ought to have the very insignificant essays on physics that he published before the Revolution? Nothing is too unimportant for whoever wishes thoroughly to study the literary or scientific history of a country, or for one who undertakes to trace the intellectual progress of eminent minds, or to inform himself in detail of the changes which have taken place in the institutions and in the manners of a nation. Without speaking of the commentaries or considerable additions which have been introduced in the various reprints of an author, the successive editions of the same work which appear to resemble each other the most are often distinguished from each other by peculiarities worthy of much attention. It has been well said, that a public library should contain all those works which are too costly, too voluminous, or of *too little value* in the common estimation to be found elsewhere, down even to the smallest tracts. An old almanac, or a forgotten street-ballad, has sometimes enabled the historian to verify or correct some important point which would otherwise have remained in dispute.

With a brief extract from the evidence of one other witness we must close our notice of the Report on Public Libraries. Charles Meyer, Esq., German secretary to his Royal Highness Prince Albert, had given attention to the public libraries of Germany, having resided several years in Gotha, Hamburg, Leipsic, and Munich. He had perused the principal part of the evidence which had been given by Mr Edwards upon this subject, and found all that he stated to be quite correct. Dr Meyer thinks the existence of the numerous and valuable libraries of Germany has given the literary men of that country an advantage over the literary men of England. 'It saved a great number of our German learned men,' he says, 'from the

danger of becoming *autodidactoi*—self-taught. I think that is one essential point of difference that is visible in comparing the general character of the instruction in this country with that on the continent: there are in this country a great number of self-taught people, who think according to their own views without any reference to previous scientific works. They make sometimes very great discoveries; but sometimes they find that they have wasted their labour upon subjects already known, which have been written upon by a great number of people before them; but as they have no access to libraries, it is impossible for them to get acquainted with the literature of that branch upon which they treat.'

From the preceding quotations, it is evident that, in the opinion of the Parliamentary Committee, and of the witnesses examined by it, there exists in this country at once a great deficiency of public libraries and a pressing necessity for their establishment. Our people are and will be readers. They are generally prepared to make a good use of books of a higher order than those offered to them in so cheap and attractive a form by our enterprising publishers. Now, either their energies will be wasted in a desultory course of reading, by which they will gain only a superficial knowledge of almost every conceivable subject, or they must be furnished with the means, which they are so well prepared to use to advantage, of going to the bottom of whatever subject interests them, and having exhausted the wisdom of past generations, of adding to the stock of general knowledge from the results of their own thoughts and experience.

The necessity for the establishment of large collections of books, freely open to the public—of institutions in which, as Ovid well expresses it,

> 'Quæque viri docto veteres cepere novique
> Pectore, lecturis inspicienda patent.'—

is, we imagine, unquestioned and unquestionable. The question now arises, How are these libraries to be constituted? On this point it will not be expected that we should dilate at length. At the present time the best books on all subjects are to be purchased at a moderate rate; and in the formation of new libraries, attention should first be paid to the supply of works most generally in demand. It will neither be wise nor just to the public to purchase, at the outset, rare and curious works: when a sufficient supply of really useful and generally-read publications has been obtained, it will be quite time enough to think of indulging the bibliomania. But there is one subject on which this taste may advantageously be indulged—and that is, every town in which a public library is established should take care to collect all works relating to its local or municipal history. A selection of the best books on bibliography should also be possessed by each. These are to the librarian and the literary man what the compass is to the mariner, or the tools of his trade to the artisan.

But we must hasten to a conclusion. As a pendant to the Report of the Parliamentary Committee, Mr Ewart brought forward a bill for the establishment of libraries and museums in country towns. This bill has now received the sanction of the legislature; its operation is, however, limited to boroughs whose population exceeds 10,000; and before it can be carried into effect, a public meeting of rate-payers must be called, and the consent

of two-thirds of those present obtained. Liverpool was the first to profit by this act: other towns have followed her example; and we trust that ere long, in all the considerable towns throughout the length and breadth of this land, public libraries and museums will be established. The subject is one that cannot be long neglected. It will go on gaining upon public attention, until seen by all in its true light, and in all its bearings. Then the connection between a sound literature and the means used for its formation will be felt; then the numerous and immediate advantages of such a form of encouragement, as the establishment of these institutions, will be clearly seen and fully understood; and the rich harvest of glory which our future scholars will reap in every branch of study must convince even the most incredulous that literature asks no favours and receives no aid for which she does not repay the giver with a tenfold increase.

AUSTRALIA AND VAN DIEMEN'S LAND.

THE British Empire, extending through all the divisions of the world, comprehends no region more adapted for colonisation than Australia. The shores of the Indian continent, rich in the most costly products of the earth, are more attractive to the trader than the emigrant; the superb islands of the remote East, with their camphor woods and precious metals, afford few plains for pasturage and corn-growing; while even the verdant karoos of Southern Africa present a less favourable field for settlement than the soil of New South Wales and Western Australia. Sixty years since the whole region was a desert. Now and then an adventurous sailor navigated the waters along its lonely shores, and disturbed the quietude of its forest-bordered harbours. Little more than half a century has established our civilisation on the north and the south, the east and the west, of this the largest island in the world. Emigrant vessels and merchant ships throng the seas between, steam-packets ply along the coasts, shipping crowds the ports, omnibuses traverse the streets of well-built towns, farms and villas multiply near the sea, and a railway train is expected shortly to whirl through the passes of the Blue Mountains. The exports of Great Britain are consumed largely among the colonists, and Australia offers in return peace and abundance to those who are willing to labour for these blessings. In fine, the progress of the country, though occasionally interrupted, exhibits altogether one of the most striking features in the history of our transmarine empire, and it may not be uninteresting to the reader of these Papers to trace with us briefly an outline of this gratifying development.

While the Portuguese and the Spaniards, early in the sixteenth century, were extending their enterprise through the seas of the further East, rumours reached Europe of a new continent in the south. The navigator, driven by contrary winds and currents beyond the bounds of his ordinary enterprise, discovered different points of land, which for a long period none endeavoured to examine. The Spaniards had been navigating the Indian Archipelago for more than eighty, and the Portuguese for nearly a hundred years before the name of any mariner became connected with the discovery of Australia. The Unknown Southern Land (Terra Australis Incognita), and the Southern Land of the Holy Spirit (Australia del Spiritu Santo), were indefinitely mentioned in their records, yet no explorer

ventured to approach the mysterious coasts dimly seen by the chance voyager in those remote seas.

In 1605, however, the Dutch, eager to attain a maritime superiority in those distant regions, equipped the yacht *Duyfen*, which sailed from the port of Bantam in Java to explore the coast of New Guinea. Returning from this expedition, the little vessel entered the waters off the shores of Australia, and sailed into the great Gulf of Carpentaria. To these early voyagers all seemed desolate and barren, for since the discovery of America, the voyage of Vasco di Gama, and the exploration of the Indian Archipelago, the navigator continually thirsted for some new Chersonese, where gold was to be found in every stream, where amber was washed up on the beach, where spices perfumed the forests, and pearls were plentiful in the shallow waters near the shore. The wild aspect of the Australian coasts consequently offered little temptation to them. Nevertheless, Spanish, Dutch, and English mariners continued to visit those seas—Dampier, between 1684 and 1700, exploring a portion of the north-western coast, and surveying it in the rude manner of his time. Half a century of further research added little to the world's knowledge of this great region; but 1770 brought the advent of Captain Cook, whose immortal memory is associated with so many seas and shores. He discovered the eastern coast of Australia from Cape Howe to Cape York—naming the region New South Wales. Many successive voyagers followed, each of whom contributed some tracing to the seaboard of this vast territory, until Captain Stokes, about eight years ago, made the entire circuit of the island, and first enabled the geographer accurately to lay down the leading features of its mighty outline.*

While the daring navigators of Europe were exploring the shores of Australia—marking its outlying islands, endeavouring to discover the mouths of rivers, fixing the position of harbours, and laying down the general outline of the island—inland discovery commenced much later, and made a slower progress. In the south, ridges of hills were known to exist, and believed to be impassable. Not lofty, but precipitous and rugged, they were intersected by deep chasms and broad barren valleys, sprinkled with half-blasted trees, and piled with masses of sandstone rock—landscapes sublime in their melancholy desolation. The Blue Mountains—so named from their habitual aspect—were long considered impassable; but when the English colonists in New South Wales were straitened for room, they looked for wider pastures for their flocks, and more extensive lands for the cultivation of corn and vegetables. Necessity, then, opened a passage through the hills, the Bathurst Plains were discovered, and a stage-coach rattled along a well-made road, winding among the mountain-passes. In other directions adventurous men, starting from different points, attempted to explore the interior of Australia; but as yet, all have been unsuccessful in their endeavour to reach the centre, and he who travelled farthest, at the utmost point of his journey has only cast his eye over a monotonous desert, apparently of interminable extent.

* To those familiar with the history of maritime discovery, the mention of such names as New Holland, New South Wales, Tasmania, Van Diemen's Land, De Witt's Land, Torres' Straits, Bass's Straits, &c. will at once recall the numerous voyages and voyagers connected with the gradual exploration of Australia.

Australia is situated in the immense ocean stretching to the south-east of Asia, and lies in nearly the same latitude with the Cape of Good Hope and Brazil. Equal in surface to four-fifths of the European continent, it extends from 113° 5′ to 153° 16′ east longitude, and from 10° 39′ to 39° 11′ south latitude. The greatest breadth, from Cape York to Wilson Promontory, north and south, is 2000 miles, and the extreme length, from Shark's Bay to Sandy Coast, west and east, about 2400. The area is calculated at 3,000,000 square miles, and the coast-line at 7750. The whole of this immense mass of land is solid and compact, broken by few indentations of the ocean. The great Gulf of Carpentaria on the north, and Spenser Gulf, in the Australian Bight, on the southern side, are the only extensive sheets, though Shark's Bay and Hervey's Bay are also considerable. Numerous inlets, however—too small to be named as breaking the coast-line, but of noble dimensions nevertheless—afford easy approach to this otherwise iron-bound island.

The mariner, for the first time approaching Australia on its western coast, perceives few of those natural charms painted by so many writers. Along these shores—even now very rarely visited—there is little to allure the eye. A monotonous plain, bounded in the distance by a chain of bleak hills, stretches from the sea, and over the surface of this vast level are scattered sweeps of ground blackened by the passage of flames. The few wandering tribes leading a nomade life in this part of the island frequently, by accident or intentionally, kindle the tall dry grasses or the low bush. The fire, seizing greedily on the parched vegetation, travels with great rapidity, and driven by the wind, spreads to the base of the hills, where the conflagration spends its fury. Generally, in one direction or another, the navigator may perceive the smoke or flame of one of these prairie fires. As we proceed further northward the shores become strewn with enormous masses of rock, extending to some distance from the beach. It is supposed that formerly the land here was considerably more elevated than at present, and that the action of water has levelled it, leaving the more durable masses unremoved. Some eminences, covered with a vegetation richer than that of Brazil or Borneo, with occasional fertile plains, present themselves in marked contrast with the general aridity of this coast.

On the northern shores the same level prevails. Flinders sailed 175 leagues without seeing any hill higher than the mast of a sloop. Irregular cliffs rise from the sea, broken by the embouchures of several rivers, some of which—the Adelaide, the Victoria, and the Albert—were discovered during the last surveying expedition of Captain Stokes; but they have never been traced to their sources. Along the Gulf of Carpentaria few elevations occur; but, reaching the eastern coast, the view is no longer monotonous or dreary. New scenes continually unfold themselves: forests, and open plains, and valleys, running up between the hills, and a more numerous population enlivening the country. Passing between the shore and that great barrier-reef which outlies the eastern coast of New Holland for more than 600 miles, we enter the principal field of British enterprise, where the coast is marked by a thousand fantastic irregularities. A line of precipitous cliffs extends far towards the south; a huge breach in this natural wall becomes apparent; and while the eye is resting on the grim magnificence of these granite barriers, the vessel glides between the rocks,

and reposes in the superb harbour of Port Jackson. The shore, sweeping in gentle slopes towards the hills, is covered with a natural growth of verdure. The sea, blue and brilliant, flows into beautiful bays, where vessels lie safe after their long voyage from Europe. White stone-built villas, with graceful gardens and groves, lend artificial charms to a landscape naturally picturesque; and Sydney, the capital of New South Wales, with its forts and lighthouses, its churches, hospitals, and customhouses, full of traffic, and smoking in the heat of industry, appears like the creation of enchantment. The industry of Europe, planted in Australia, now ploughs the sea between Port Jackson and Moreton Bay with steamers, which prepare the mind for the scene presented within; but with this exception, the change from the outer view to the panorama of Sydney is as that from a lifeless desert to an English seaport.

Still proceeding southward towards Cape Howe, the coast wears a similar aspect, until, rounding the huge peak of Wilson Promontory, with its inaccessible islets lying around, we enter Bass's Straits. Sailing along the fertile shores of Australia Felix, the eye of the mariner rests with delight on the scenery for many hundred miles. Towards the west the surface again becomes level; irregularities are few; tall sloping cliffs commence; and the country sinks into a plain covered with scrub, and extending as far as the south-western point of the island. There rises a range of low hills, continuing as far as Gautheaume Bay, where we reach again the desolate level from whence our circuit commenced.

The general surface of Australia, so far as it has yet been explored, is level. In New South Wales several ranges cover a large portion of the province. Of these the principal are the Warragong, or Australian Alps, in the region called 'The Happy,' rising to the height of about 15,000 feet, and capped with perpetual snow. The Blue Mountains, west of Sydney, attain an elevation of 3000 feet; the Grampians, in Australia Felix, of 4500; and the Liverpool Range, between Sydney and Moreton Bay, of 6000. Other ridges, connecting these, complete a continuous though tortuous chain more than 1000 miles in length. This chain runs from Portland Bay in Australia Felix, at a distance of from 60 to 100 miles from the sea, as far as Moreton Bay, branching out into several inferior ridges. The western mountains never rise to more than 3000 feet, and in no other division have any eminences deserving this name been discovered. The surface of Australia, therefore, is more uniformly level than that of any other region of equal extent. Its mountain-system also is altogether peculiar: in the countries of the old world every range, however tortuous, agrees in general direction with the length of the continent in which it lies; in Australia the case is reversed—the hills run transversely from north to south. In the old world also the tendency of the ridges, valleys, and rivers is parallel; but here we find a region apparently struggling into form with all the elements of its ultimate perfection loosely scattered over the surface. For example—south of latitude 33 degrees, the valleys run along the base of the hill-ranges, watered by streams which follow their direction throughout; north of that latitude they cross from east to west; while in the western provinces the land is divided into terraced plains like the steppes of Tartary. Thus a theory formed by investigation in one place is destroyed by the examination of another. All the geological formations exist; but

they occur without order, and appear subject to none of the laws laid down by science in the old world. Again, if we turn to the animal and vegetable kingdoms—we have black swans; white eagles; crabs of an ultra-marine colour; those singular insects the walking leaves; cherries growing with their stones outside; trees which shed their bark instead of their leaves; quadrupeds with birds' bills; and fish that are amphibious, leaping over the ground by the aid of their strong spiny fins.

Australia is consequently called the Land of Anomalies; but if we accept the theory of its recent growth, these phenomena become intelligible. All its features indicate an origin dating not far back in the history of creation. Its physical structure, as we have shown, is incomplete and peculiar; its indigenous vegetation is of the scantiest description; in many parts its soil is raw and unproductive; while its fauna belongs to the lowest orders in the animal kingdom. All is rough and crude—a mass of disordered elements unmoulded into the beauty of perfect nature. In the river system the same irregularity prevails; no more than thirty-five mouths of streams have been discovered along the whole of this immense coast-line, and of these none have been traced more than two hundred, and few more than fifty miles, from the shore. They are insufficient to the drainage of a tenth part of the island: a fact which gave rise to the belief, not yet altogether exploded, that far inland a circular range of mountains existed, down whose inner slopes numerous rivers poured their waters through the plains into a great central sea. There is still, it is true, a vast blank around the centre of Australia; but travellers, as far as they have hitherto explored, have failed to discover any indications of this lake. Natives have reported the existence of a 'great water,' breaking in waves higher than the mast of a ship; but probably they had travelled from some district near the coast, and confounded the Southern Ocean with the inland sea of which the wanderers were in search. Violent inundations, however, certainly do occur, when the springs in the mountains discharge volumes of water, converting small streams into torrents, and spreading the waters over whole tracts of country. Deceived by these ephemeral floods, travellers have brought home accounts of immense lakes extending beyond the reach of sight, in places where the next explorer has found a grassy plain, covered with the traces of a dried-up deluge. In South Australia are several sheets of water, but few of them large or permanent. The Salt Lake Torrens, discovered by Eyre, lies at a distance of 400 miles from the sea, almost enclosing a circular tract of land nearly 200 miles across; Lake Alexandria, which receives the waters of the Murray River, is the most extensive of the fresh-water basins; while scattered along the banks of several streams in South Australia, and Australia the Happy, are considerable expanses of water, which do not in all cases bestow on the land that fertility to be expected from such an abundance of irrigation. In other countries rivers are the great fertilisers, and throughout their course clothe their borders with verdure. In Australia only the higher lands thus watered are verdant, and the streams spread themselves over a barren sandy waste, which they are powerless to reclaim.

From the great range which shuts in Sydney on the west descend numerous streams, which flow inland, and reach the plains through rocky and tortuous channels. Those below the latitude of 33 degrees empty

themselves for the most part into the Darling, which, after a long and winding course, joins the Murray 200 miles from the sea. Those above pour into the Lachlan, the Morumbidgee, and the Hume—also tributaries of the Murray—a river which, though its course is many hundred miles, bears no proportion to the size of the region it waters. None of greater magnitude has been discovered. The streams in South Australia and Western Australia are in comparison insignificant; but it is a received opinion among many geographers, that great water-springs exist in the island, which will ultimately burst from the earth, flow together, form for themselves channels, and find outlets at various places along the coast. Springs are formed by the accumulation of moisture in the cavities and gullies of hills, and this process is at first extremely slow. When overcharged, these reservoirs burst, and emit their superfluous waters, at first by an occasional overflow, but gradually in a continuous stream. The waters wear their own channels, growing slowly from rivulets to rivers; and in Australia great numbers of these incipient, half-developed streams exist. At present, in the river-system of Australia, as well as in its mountains, valleys, and geological formations, its botany, and its zoology, we discover a strong support of the theory that this region is of recent emergence from the ocean. Formerly, Captain Sturt believes it consisted of an archipelago of islands. The bed of the ocean, upheaved by the agency of subterranean fires, raised the whole to a level; and the action of the great sea sweeping over it, has produced those strange appearances which have earned for Australia its curious title—The Land of Anomalies. The researches of travellers in the interior will at no distant day lay it open to examination; and when the great doubt is removed, science will explain with accuracy phenomena at the present day so perplexing.

Over such a vast surface of the earth a variety of climates may naturally be expected to prevail. Throughout Australia, however, it is generally salubrious and genial to the European constitution. The third part of the island—the north—lies in the torrid, the rest in the temperate zone. The former part is not yet sufficiently known to allow an exact description of its salubrity; but in the extra-tropical divisions human life is endangered by few natural afflictions. Endemic diseases are all but unknown; small-pox, measles, and hooping-cough scarcely ever appear; but dysentery is common, though all disorders yield to simple remedies. It may be useful to state a point on which the best authorities agree: that the settler in Western or Southern Australia may in all cases preserve himself for the honours of a ripe old age by temperate prudence; for deaths from climateric diseases are exceedingly rare.

The plains of Tropical Australia are swept by the Indian monsoons—blowing north-west about the beginning of November, and south-east in the early part of April. Rains are there uncommon, but the air is generally heavily charged with damp, and iron rusts after a few hours' exposure. In the extra-tropical divisions a mild drought often prevails. On the lowlands 65 degrees is the mean temperature of the year, but the atmosphere rapidly changes to cold as the surface rises; while on the peaks of the mountains the earth is eternally clothed with snow. The order of the seasons presents a curious contrast to that of Europe: from March to August is the winter; the rainy season is in May; while summer lasts from September to

February. In the interior the weather, whether wet or dry, is always warm. One remarkable feature has been observed, or we should rather say has been supposed, to exist in the climate of Australia: at intervals of twelve years a period of unmitigated drought prevails, and for twelve months the clouds never send down their gentle showers to refresh and fertilise the earth; following this is a year of continual floods; after this the quantity of rain decreases, until another cycle has passed, and the land is once more parched with excessive thirst. Dews are abundant; thunderstorms without rain last for several days; and on the northern coast a shock of earthquake is occasionally felt.

In all things wandering from the ordinary course of nature, Australia is equally strange in her soil. In those interior deserts, a few times traversed by the traveller, it is various: in some places a red tenacious clay; in others a dark, hazel-coloured loam, rotten, and full of holes; in others, but these few and limited, sandy. When Sturt was exploring this dreary waste, he vainly looked for evidence of a hilly country near. 'Had we picked up a stone,' he says, 'as indicating the approach to dry land, I would have gone on.' But nothing of the sort was found; and the desert ever widening to his weary view, he turned about and retreated. In the sloping lands of New South Wales, however, and in the elevated valleys of Australia Felix, a rich, dry vegetable soil prevails, abundantly prolific. In the rest of the island, the soil, like the river-system, is yet in the mould of nature; and doubtless at some distant period every prairie throughout this magnificent region will smile upon the immigrant, like those fertile 'Plains of Promise' discovered in the north by Captain Stokes.

Of the 70,000 or 80,000 species of plants described by botanists, 5710 are already known to exist in Australia. Of these only 270 are common to it and to other countries, while 5440 are altogether peculiar to its extraordinary soil. Thus this island contributes to botany nearly a twelfth of the plants known, but they are generally of a very low order. Ferns, nettles, flowers, and grasses, having the form, bulk, and habits of trees, are abundant; hard timber, with rosewood, sandal-wood, and cedar, is plentiful; some trees yield the purest gums; while the leaves of others are used as tea. The sassafras and castor-oil have been discovered. On the northern coast palms flourish abundantly, and the tropical mangrove exists in those parts nearest the Indian islands. With one exception, all the trees of Australia are evergreen. No dense woods have been found; and the groves, from a peculiar arrangement of their foliage, present a strange appearance—many of the trees having their leaves hanging with the edge downward. Flowering plants of excessive beauty are found; and the lily, tulip, and honeysuckle grow to the size of large standard trees. There are many odoriferous shrubs, which scent the air to a considerable distance. In the interior immense numbers of prickly plants cover the ground, binding down the loose soil, and preventing that drift which distinguishes the deserts of Arabia and Africa from the Australian wastes.

Large pastures form a prominent feature in the aspect of the country; yet a heavy, English sward is seldom found. Flax, tobacco, a species of cotton, tares, indigo, chicory, trefoil, and burnet (an excellent substitute for tea), are natural productions; but of fruits and vegetables fit for human food there is a strange scarcity. The pith of a reed is the only indigenous

substance with which bread can be made, and the only known fruits are raspberries, currants, one or two tasteless berries, and a species of nut. It appears as if Australia had been selected for colonisation, by the avidity of civilised man, before her soil was sufficient to his support, and she was called on to nourish the children of an overpeopled land ere her breast was filled by the rich treasure of maternal maturity. Yet industry may be said to have outran nature, and completed in sixty years the task which centuries would not have accomplished. Corn-crops and orchards abound in all the colonised districts. Every species of grain, including maize, is cultivated with success: oranges, lemons, citrons, nectarines, apricots, peaches, plums, cherries, figs, mulberries, quinces, bananas, guavas, pine-apples, grapes, and many others, the produce of Australian soil, are sold cheaply in the Australian markets; and doubtless the luscious fruits of India will all shortly follow. The sugar-cane probably would thrive in the lower latitudes, but the colonists prefer pastoral industry, for which, indeed, the land affords much facility; though it is said that the keep of a sheep upon the native grasses requires three times the extent of ground which in a moderately fertile district in England would fatten an ox in summer, and keep two sheep during winter.

The zoology of Australia, like every other department of its natural history, also presents extraordinary features. The number of known species of mammalia is about one thousand. Fifty-eight are found in Australia, of which forty-six are peculiar to it, leaving twelve only which it contains in common with other regions. Even of these five are whales and four seals; another is the strong-winged bat of Madagascar; another like the jerboa of America; and the last the dog—an animal found always where man exists, and rarely, if ever, where he does not. Kangaroos, however, are almost the only important animals. In the birds and reptiles similar peculiarities exist, while of fish and insects no account has ever been completed.

The people who inhabit this extraordinary region belong to the Ethiopic, which is the lowest family of the human race. Many writers, with great ingenuity, have attempted to trace the original colonisation of Australia to a horde of Malays passing over in canoes from the Indian Archipelago, across Torres' Straits, to the unknown Southern Land. The colour of the skin, however, the formation of the skull and the limbs, with the genius, the habits, and the general character of the Australians, identify them with the negro race of New Guinea. The weapons they employ are similar, and their progress in the industrial arts, as well as their mental qualities and conditions of existence, being infinitely lower than those of the Malay, and closely similar to those of the Papuan, destroy the theory of their Malayan origin. Traditions they have few, and those but faint and incoherent. It is probable, however, that the wild savages of the Indian Archipelago, driven from their original homes by the superior civilisation of the Malays, put to sea in rude canoes, and reaching the mysterious Southern Land, debarked, and gradually peopled the wilderness. They left their own rich islands to the conquering Malays, deserting a contested heritage for one where security and peace made up for the loss of a soil spontaneously productive. Liberty, even to the wild savage, is sweet, and life more cherished still, so that doubtless, if Australia was unpeopled at so late a period, the growth of the Malay empire in the East scattered the swarms of

Papua along its desert coast. That an infusion of other blood has taken place is probable, but not to such an extent as to have influenced the character of the population. The old custom of circumcision is found at two places, at opposite extremities of the island, and nowhere else. This appears to us rather as a traditional custom, originally practised by the whole race, whose size has dwindled to this narrow compass, than as a grafted habit borrowed from the Mohammedan traders. Thus in Bali, among the Indian islands, the burning of widows was until recently an established custom. It was not, however, a practice derived from accidental intercourse with the Hindoos, but the relic of a mighty empire once held by that religion in the further East.

The Australian aborigines are divided into numerous tribes, with distinct modes of life and various languages. The dialect of the south is a strange tongue in the north, and the northern vocabulary is wholly unknown in the east. The habits of the natives are unsociable: they seldom come into contact, except in war, each tribe wandering at will through the solitudes, where they have hitherto held an empire all their own. Their manner of existence in some measure resembles that of the Californian savages—dwelling in huts of the most primitive construction, and existing on the seeds of grass, and the pith of reeds, made into cakes. Those living near the coast consume large quantities of fish, which they roast, but have no idea of the effect of fire upon water. A shipwrecked sailor, domiciled among a tribe of Australians, once obtained the reputation of a sorcerer by boiling a potful of water. They gash their bodies with decorative scars, and strike out their front teeth, in the spirit of vanity inherent in the most barbarous as well as the most civilised people. An English trader once made a large profit by selling in London a number of these teeth, beautifully large and white, for the use of the dentists.

The colour of the Australian's skin is lighter than that of the African negro; his form, unencumbered by clothing, is well proportioned; his hair, black as ebony, is twisted about the head in the form of a hoop; no whiskers or moustaches are worn, though a scanty beard frequently drops from the chin; the face is in almost all cases ugly, even to repulsiveness: the nose large and flat, the mouth extravagantly distended, the ears long, the forehead retreating, and the chin highly protuberant. Nor is the character of the Australian more alluring: to lie and to cheat are practices almost universal—not so much indicative of moral depravity, as illustrative of the low condition in which these savages still remain. Among some tribes treachery to Europeans ranks among the virtues, and basely to assassinate a white man is considered heroic. We knew a naval officer who was stabbed from back to breast by one of these barbarians, who stole on him as he sat sketching on a bank in a lonely spot. On another occasion, two Europeans, engaged in making observations, were startled by a loud shout from above. Looking up, they saw with horror the summit of a lofty bank swarming with savages, who quivered their spears, and were evidently intent on the strangers' death. The Englishmen, skilled in the characteristics of the savage mind, immediately commenced dancing, capering until they were ready to sink under exhaustion. Every time they paused in their strange exercise, the savages lifted their spears with threatening gestures; till at last, weary of the sport, they quietly retired.

With some tribes, however, different ideas prevail, and shipwrecked men, hungry and naked, have in the worst hour of their need learned to bless the rude but honest hospitality of an Australian savage. Among themselves a crude social system exists. Ideas of property are very distinct, and one man respects the roasted fish and fried frogs of another with scrupulous integrity. Murders are rare, and when they occur, are punished. It is the opinion of certain philosophers that these wild men will never be reclaimed, but will be driven deeper into the wilderness as colonisation proceeds, until ultimately all will perish under the breath of English civilisation. It is hard to accept this theory, though there is unfortunately much in the history of modern times to lead to its adoption. We would rather cling to the philosophy of the poet T. K. Hervey, who writes in the spirit of humanity, in language of the loftiest eloquence, for the wild man of the Australian desert—

'Yet on his forehead sits the seal sublime
That marks him monarch of his lovely clime,
And in his torpid spirit lurk the seeds
Of manly virtues and of lofty deeds.
Within that breast where savage shadows roll
Philosophy discerns a noble soul,
That, like the lamp within an Eastern tomb,
But looks more sickly 'mid surrounding gloom.
Full many a feeling trembles through his frame,
For which he never knew or sought a name;
And many a holy thought but half suppresst
Still lurks 'mid all the tempest of his breast.
Pants not his heart with human hopes and fears,
And is he not the child of smiles and tears?
'Tis love that links him to his native woods,
And pride that fires him while he breasts the floods,
And glory guides him, felt but undefined,
To battle with the breakers and the wind,
To tempt the torrent, or in arms to claim
The savage splendours of a warrior's name.
True, through their souls all fiercer passions run—
These fiery ones, these children of the sun.
But gentler thoughts redeem the frenzied mood;
Represt, but quenchless, hid, but unsubdued.
Theirs is the spell of home, where'er they rove;
The maiden loves with all a maiden's love;
And the dark mother, as she rocks her boy,
Feels in her bosom all a mother's joy!'

Where the human heart is warm with these feelings, it is surely susceptible of some refinement. An anecdote will show that the mind of the Australian savage is not blunt to all the better passions of humanity. A native named Tonquin, dwelling on the banks of the Swan River, stabbed one of his comrades. The murderer fled into the desert, remaining there for fifteen days alone with the memory of his crime. When he reappeared among the people of his tribe he was a maniac—heartbroken by remorse.

The Australians recognise a benignant god and a variety of evil spirits, especially one in the form of a gigantic serpent. When the winds groan over the hills and woods, they imagine it to be the voice of this monster, and illuminate the plain with fires, repeating magic spells to scare the evil one away. Notwithstanding this timidity, they are brave in battle, though trembling in the presence of death. A grave placed before the door of a

house is a perpetual safeguard against thieves. The dwelling of a lonely settler was once attacked by the natives, of whom two were slain. Their bodies were buried in front of the house, and the two low mounds, haunted with the idea of death, were more formidable than the loftiest walls. Some of the tribes enclose their dead in wrappings of leaves and bark, placing them among the branches of solitary trees, near which the vulture sits immovable, with drooping wings, waiting for the last covering to drop from the corpse. Captain Stokes saw one woman who continually bore, hanging from her neck, a net containing the bones of a little child whom, during its short term, she had loved, and over whose dear remains she lingered with tearful eyes, imagining, in the warmth of her maternal fondness, that they rose before her clothed again with the lineaments of life. The Australians regard the white men as their former brethren, whose spirits, purified after death, have passed into superior forms. At Perth, one of the colonists was twice visited by a strange native, who had heard that there had come to his land a lost brother. The savage travelled through a long extent of hostile country to behold again a cherished friend blessed with the glory of a second life, who had left his paradise beyond the sea to revisit the scene of his earthly career.

Three ranks of society prevail among the aborigines: the young men, the warriors, and the aged—the hierarchy of the Australian commonwealth. Simplicity degenerate is their characteristic. Four slender poles planted in the ground, and roofed with wattled boughs, form a palace for one of these lords of the creation; and at night, when cold winds blow, the savage, burying himself neck deep in the sand, warms himself literally in the bosom of mother earth.

What, however, is chiefly interesting to the English reader, is the colonisation of Australia. First in order of the settlements is that of *New South Wales*. It was the earliest established, and has risen to prosperity by more rapid degrees than any other. From a miserable convict colony it has become a valuable dependence of the British Empire, with a flourishing capital, and an increasing trade. Sydney, with its churches, theatres, forts, hospitals, and other public structures—its banks, hotels—its parks and promenades—above all, its crowded port—displays all the features of a young and energetic civilisation. Trade is developing largely; its population has become an important consumer of British manufactures; and its towns and rural districts offer a fine promise of fortune to the industrious emigrant from the mother country. But it is a saying no less expressive than true, that those who settle in Australia must lay by their kid gloves, cast off dainty habits, customs, forget their love of lounging, and look to themselves only for the success they desire. No others will prosper in New South Wales. The youthful colony needs no soft-handed Sybarites, whose whole life is the realisation of one idea—comfort. The young with open prospects before them—the disappointed with a wreck of fortune—and those who have accumulated a small store of wealth by the industry of a life, do well to emigrate to Australia. The young may look for opulence, others may retrieve their losses, and the old may plant their vines and fig-trees at once to shade their heads in age, and to make a provision for their children. But none can succeed there or in any other

colony who forgets these important rules—to depend on his own vigorous industry, to be frugal and sparing of expenditure, to be cautious in his speculations, and watchful when he has entered into them.

Eighty years ago the adventurous voyager Captain Cook sailed along the eastern coast of Australia, and there, in latitude 33° south, discovered a commodious inlet. Near the water's edge he saw many curious flowers blooming wild, and from them named the place Botany Bay. The account of his visit was circulated in England; and when, sixteen years later, our unhappy war with America had closed up the great outlet for crime, it was resolved to establish a colony in some other part of the world. The African coast at first appeared convenient; but the idea was abandoned. Then the existence of Australia seems first to have been remembered in England, and the idea suddenly flashed upon the public mind of carrying the seeds of British population to people the 'Unknown Southern Land.' Botany Bay was thought of. In 1787 the *Sirius* and the *Supply*, with six transports and three store-ships, sailed with the germs of a new colony on board. Besides the crews and 166 marines there were 757 convicts—565 men, and 192 women. Stores and provisions for two years were taken, besides agricultural implements and tools, with all the necessaries for the foundation of a permanent settlement. Captain Philip, the appointed governor, took command of the squadron, and sailed first to the Cape of Good Hope, then belonging to the Dutch, where live-stock and seeds were procured. At Rio Janeiro more stores were taken in, and the expedition steered direct for the new land.

Continuing their course, they reached Australia after a voyage of eight months and one week. On January 20th they anchored near the antipodes of their native country in general good health. Botany Bay appeared to promise little. Water seemed scarce, and an aspect of aridity on the surrounding land decided them to go elsewhere in search of a place of rest. The fleet, therefore, weighed anchor, and as they left the bay, two French ships under La Perouse entered it. That enterprising discoverer stayed two months in this haven, and then set sail for the Pacific, disappearing for ever from the sight of civilised man.

Drawing near an opening in the cliffs, a few miles further north, the governor went to examine it in person. The natives collected on the rocks, shouting to the strangers to go away; but they persevered. Captain Cook had reported the existence in this neighbourhood of a creek where boats could be sheltered. A sailor named Jackson, however, declared that a great haven lay within the mighty rocks that frowned above them; and entering between these, the explorers were delighted to discover a harbour of many miles in extent. A fine anchoring-ground was at once chosen, and the name of the sailor bestowed on the harbour. This is one of the instances in which the name of the original discoverer has remained fixed to the scene of his discovery.

The spot chosen for debarkation was near a stream of fresh water overshadowed by trees. Every man literally stepped from the boats into a forest. They detached themselves into parties, and the primeval silence of the shore was immediately broken by sounds which have never since died away. Some shouldered the axe, and commenced clearing ground for the different encampments; some pitched the tents; some brought

from the ships the necessary stores, and others examined the capabilities of the neighbouring soil. Every one wandered freely over the country, and wholesale disposals were made of land which, fifty years later, was worth more than a thousand guineas an acre.

The people were then collected together, and the governor's commission was read, with letters-patent for establishing courts of justice. The ground was gradually cleared, a rude farm was prepared to receive the live-stock, and gardens were laid out for the planting of seeds and roots. The *Supply* was then sent to Norfolk Island, a thousand miles to the east, to form a settlement on a spot said to be favourable to the cultivation of flax. Thus was planted the colony of New South Wales. Before tracing its growth, it may be desirable to describe the territory, and show upon what materials English energies were then set to work.

From a point on the eastern coast, near the Tropic of Capricorn, to Portland Bay, on the south, the coast-line of New South Wales measures more than 1600 miles. It is broken by many safe and spacious harbours—the gateways, as it were, of a country diversified in aspect, with a rich soil, abounding in coal and iron, and intersected by numerous streams. These flow from the ridge of mountains we have already described, winding down the slopes, and traversing, with a tortuous course, the maritime districts, and discharging themselves into the sea at intervals along the eastern coast. Few of these are navigable, even for small craft; but they serve to enrich and adorn the high valleys through which they flow, covering the earth with fertility. South of Sydney, as far as Bass's Straits, the mountains encroach so nearly to the sea that the streams are mere torrents; but northward are several fine rivers—the Hawkesbury, the Apsley, the Brisbane, &c. Near Port Philip others have been found; but none of those which descend the eastern slopes of the great range, and follow an independent course to the sea, are of equal magnitude with those on the western side, which swell the waters of the Murray. Two great channels, we have shown, receive the tribute of all the hills, from the Grampians to the Darling Downs, yet hitherto they are little used for navigation. For the formation of highways, however, and railways, the surface of New South Wales is admirably adapted—a fact which compensates in some degree for its poverty of water-communication, in all countries the easiest and most obvious.

The climate is mild and proverbially salubrious. It is indeed commonly compared with that of Southern Italy, but the remark should be accepted with reserve. The atmosphere is drier, the extremes of temperature are greater, the average heat is less, and the air becomes colder more rapidly as we ascend the hills.

The soil of New South Wales is capable of yielding every grain and vegetable useful to man, with fruit in rich perfection, and in the utmost profusion and variety, from the gooseberry and currant of the north to the banana and pine-apple of the fervid tropics. Even in the neighbourhood of Sydney, apples, pears, plums, strawberries, cherries, raspberries, mulberries, medlars, apricots, nectarines, figs, grapes, melons, oranges, olives, lemons, citrons, loquots, and pomegranates, are abundantly produced; while in warm and sheltered situations the luscious guava and banana grow intermingled. Peaches—never in England a very common fruit—are abun-

dant to excess in New South Wales. During four months in the year they are produced in incalculable profusion. The fruit grows everywhere in all soils. A peach-stone planted, no matter where, will in three or four years become a fine productive tree. In such numbers are they gathered, that vast piles are made, which are left to ferment in the sun, and then thrown to the hogs, who fatten magnificently on this dainty food. A pleasant and wholesome cider is made from the peach.*

Green peas are gathered in winter as well as in summer, and two crops of potatoes are produced in the year in districts near the sea-coast. As we approach the hills, the cold seasons become more severe. Sharp white frosts are then of usual occurrence, and snow lies even on the lower mountains. On well-chosen soil the wheat-crops, with good cultivation, average from twenty to thirty bushels an acre. In the colder district of Argyle forty bushels an acre are often obtained. The small settlers at first, however, carried on so improvident a system of husbandry, that fifteen bushels was the average produce. The seed-season for wheat, barley, and oats, is from March to June, and harvest from November to December. Maize, the most prolific of all grains, sown in October and November, ripens in March and June, producing, according to the quality of the soil, from twenty to seventy bushels an acre. There are thus two seed and two harvest seasons in New South Wales, and the sickle and the drill are in continual employment.

The soil and climate are admirably adapted for the cultivation of the vine, the olive, and the mulberry. Many vineyards and olive-plantations have been established, and flourish well, while extensive fields of good tobacco alternate with the other species of cultivation. It is considered probable that silk and dried fruits will shortly enter into the exports of the colony, nor is it unreasonable to suppose that the capabilities of the soil remain as yet incompletely developed. Its richness is singular; yet for the food of civilised man nature in New South Wales has produced spontaneously nothing. Trees of gigantic growth, flowers of brilliant hues, and wholesome pastures, abound; but the forests are not hung with fruits, the fields are not covered with grain-bearing grasses, and edible roots in this division of the island are unknown. Yet, as we have said, to the hardy settler willing for a while to eat bread by the sweat of his brow, and accumulate fortune by diligent industry, no country in the world is more favourable for settlement. There is a fine contrast between the bleak desolations of the Blue Mountains and the fertility of the lower provinces: the one wild and terrible; the other presenting a pleasant prospect of green and beautiful pastures, graced by swarming flocks, with towns, and villages, and decorated villas, with cultivated lands, and all the signs of a complete civilisation. Cattle thrive well in New South Wales, where the pastures are sweet and wholesome, fattening the animals well, if not with unusual rapidity. The produce of grain and vegetables will always supply the colony with cheap provisions; but its chief commercial wealth at present is in the pastures, where the millions of pounds of wool are produced which now form so important an article of exchange for the manufactured fabrics of Great Britain.

* In America a very good brandy is made from the fruit of the peach.

This general sketch will afford an idea of the region first colonised by the English in January 1788. The early years of the settlement were far from prosperous. Idleness, ignorance, crime, and general demoralisation prevailed. Some of the convicts were hanged, others killed themselves by excess, and others fell under the knives of their comrades. And, as usual, among a community for the most part criminal, offences were rarely punished, because the offenders could not be discovered. There is a strange fidelity among the wicked. Men who would rob one another, steal a pittance of food, and quarrel until knives were drawn, refused to betray a fellow-culprit.

The great difficulty in any colony is its support during the early years of its existence. From the first, this object was steadily kept in view by Governor Philip; but the idleness and inaptitude of the settlers—who had not chosen the best field for farming operations—contributed to bring the community into danger of famine. Cultivation proceeded slowly and irregularly, the stores were wasted and stolen, the provisions decreased, and scarcity threatened. After two years' struggles the rations were reduced, and the colony languished in despondency. While, however, the spirit of industry flagged, and the land lay untilled in spite of the danger, an eager attention was given to any rumour which seemed to promise wealth without labour. The curse of many colonies has been a mine of gold, a grove of spice-trees, or a bank of costly pearls, for they allure men from industry to spoil the earth of its natural treasures. An impostor among the convicts knew the temper of his companions. With a brass buckle and a guinea he manufactured specimens of the precious ore, and displaying them, endeavoured to get clothes and provisions from the stores as the reward of his discovery. But the deceit was detected, and the impostor flogged for his fraud. The miserable man afterwards ended his life on the scaffold.

A flagstaff was now erected at the entrance of Port Jackson, to signal the arrival of any ship: as the provisions sunk, many an anxious eye was turned upon the staff, desiring the expected sign. Alone on that remote, inhospitable coast, they dreaded the horrors of famine, though somewhat relieved by the supplies of fish brought in three times a week, and distributed in equal rations to the whole community. The governor made no exception in his own favour, faring as the rest fared; and when a party was collected at the government house, each guest was requested to bring a supply of provisions for himself. In 1790, though the rations had been reduced by one-half, there were only four months' supplies in the colony, and some measures were necessary to check the approach of famine. It was resolved to plant a settlement on Norfolk Island. Two hundred and one convicts, men, women, and children, were sent thither, and a vessel was despatched to Batavia for supplies. The *Sirius*, bearing her criminal burthen to Norfolk Island, landed them, and was immediately afterwards wrecked upon the coast. A lofty hill was observed, whither at evening enormous flights of birds proceeded from the sea, where all day they collected food. Their eggs were gathered in vast quantities, and when fires were kindled to attract their notice, the birds came down in such numbers, that 2000 or 3000 were taken every night. From the circumstance of this occurring at a time of great need, these birds were called the Birds of Providence.

Meanwhile more convicts arrived at Port Jackson; death struck down numbers of the first comers; sickness prostrated nearly 500 at a time; and a state of demoralisation followed which rendered the young colony of New South Wales a lazar-house of crime and misery. Five men, endeavouring to escape, put to sea in a boat, steered for Otaheite, and were doubtless drowned in the abysses of the Pacific. Many of the Irish started off, intending to travel across the whole region, and reach China overland—for only so far had our knowledge of the country then proceeded. Probably they were killed by the natives, though some of them may have become domesticated among them, and adopting their customs, sank into the savage state. Next year ten ships arrived with upwards of 1000 convicts, and their coming imparted an air of life and activity to the infant city of Sydney. Various public works and buildings were commenced; tanks were cut in the rocks, to provide against dry seasons; and fresh land was got ready for the cultivation of Indian corn. Some of the ships, after discharging their cargoes, were employed with considerable success in the whale-fisheries; while many of the convicts were for good behaviour released, on condition of remaining in the country to fulfil the terms of their sentence, while those who had already passed their terms, and were willing to remain, received allotments of land.

At the end of 1791, when the colony had been established four years, the public live-stock consisted of one aged stallion, one mare, two young stallions, two colts, sixteen cows, two calves, one ram, fifty ewes, six lambs, one boar, fourteen sows, and twenty-two pigs. The cultivated ground amounted to 300 acres of maize, forty of wheat, six of barley, one of oats, four of vines, and eighty-six of garden ground, besides seventeen under culture by the soldiers of the colonial corps. These were the humble beginnings of that wealthy colony, to which, in the first half of the year 1850, we exported more yards of cotton cloth than to the whole Austrian empire. When we reach the present state of the province it will be seen what advance has been made.

Six years after the foundation of the settlement, a church was built of wood and thatch, costing £40, and employed during the week as a school-house, where 200 children were instructed by the chaplain. Meanwhile the mortality increased, provisions ran low, and famine again became imminent. All the while the utmost discontent prevailed. Fifty-three persons were missing at one time, all of whom had deserted in the delusive hope of reaching China overland. Crimes and punishments multiplied, and the infancy of the colony was passed in the most disheartening confusion. Drunkenness and gambling demoralised the community, the spirit of sloth invaded it, and it became dependent on importations of corn. The live-stock, however, increased. A few animals strayed, and some years after there was discovered on the banks of the Nepean river a herd of upwards of sixty cattle, wandering over pastures of fine sweet grass, thinly scattered over with trees, and dotted with large ponds. Upon the surface of these sheets of water, fringed with beautiful shrubs, ducks and black swans swam to and fro. Perceiving the value of a wild breed of cattle near the settlement, the governor arranged that no part of this fertile tract—to this day known as the Cow-Pastures—should be allotted. In consequence of this the animals multiplied so rapidly, that before 1813 the 60,000 acres were

unequal to contain them. A severe drought following, they died by thousands; and from that period the Pastures were allotted, and the wild herds retreated to a greater distance from the sea.

Captain Hunter, the second governor of the colony, was an adventurous man. He explored the country, and enlarged the boundaries of the settlement. Several valuable discoveries were made during his administration. In 1796, some men fishing in a little bay considerably to the north of Port Jackson, found at a little distance from the beach quantities of coal scattered over the ground. Near the spot a considerable river — now named the Hunter—discharges itself into the sea. The valuable mineral was obtained in abundance, and a township has now been established there which supplies the whole colony with this fuel. A large trade in lime, obtained from immense quantities of oyster-shells thrown up on the beach, is carried on at this place—appropriately named Newcastle.

Through all its struggles Sydney continued to rise, and by slow degrees free settlers from England arrived. Government provided their passage, their tools and implements, allotments of land, provisions for two years, and clothes for one. Soldiers and convicts also turned farmers, and individual instances of prosperity encouraged the rest. One man to whom Governor Philip had in 1792 granted a ewe for breeding, found himself in seven years proprietor of 116 sheep, and on the high road to opulence. While some applied themselves to the rearing of flocks and herds, others pursued agriculture, and many beautiful farms were established on the banks of streams near the little town of Sydney. A gradual change came over the face of the province: from a wild forest it became a pastoral country, with houses, stacks, and sheds, fields well fenced, and all the usual features of well-directed industry. In the last year of the eighteenth century a great flood took place. From some unknown cause, the river Hawkesbury swelled to an enormous volume; and a settler, whose dwelling stood on a hill, near a beautiful bend of the stream, saw at one moment, floating with the flood, no less than thirty wheat-stacks, on some of which were numerous pigs and poultry, vainly seeking refuge from the rising of the waters. The consequences of this disaster were most calamitous. Wheat rose to 30s. a bushel in a colony where it had at times been thrown to the pigs, and Indian corn became equally scarce.

In course of time roads were made through different parts of the colony; and in 1813, when the settlers resolved to widen their territory, a passage was found across the Blue Mountains. A drought in the maritime plains and valleys compelled the colonists to seek pasturage beyond; and driving their sheep and cattle through the passes, they came down upon the plentiful plains of Bathurst. An excellent road, 100 miles in length, now connects Sydney and the town which soon sprang up in the new territory.

In Governor Bligh's time an insurrection upset the government, which was with difficulty restored. A contest then broke out between two parties in the community—the Exclusionists, who, in the petty pride of honesty, refused to associate, even in the offices of charity, with the tainted population; and the Emancipists, who considered that a convict, after his term of punishment expired, was as good as any other man. The first endeavoured to stamp the criminal with an ineffaceable brand of infamy; the second, perhaps too hurriedly, sought to produce a mingling of the convicted and

unconvicted classes. The governor, Maquarrie, famous for his success in road-making, exerted himself philanthropically to raise the convicts from their degradation, and thus came into collision with the sentimentality of a few little-minded Exclusionists. During the twelve years of his administration New South Wales increased in extent and prosperity, while the boundaries of discovery were pushed still farther westward. Bathurst Plains, and the ways to them, were discovered; the district of Argyle was opened to the enterprise of the settlers; two rivers, the Lachlan and the Maquarrie, were traced beyond the Blue Mountains, until they were supposed to flow into pathless swamps; while northwards the river Hastings, with a large tract of pasture-land, called Liverpool Plains, was discovered. A penal settlement for the punishment of refractory convicts was formed on the Emu Plains; another at Newcastle, near the mouth of the Hunter; and a third at Port Maquarrie, at the mouth of the Hastings, about 180 miles north of Sydney. When Maquarrie's administration began, the settlement was in a state of imbecility, disabled by privation, the country impenetrable beyond forty miles of Sydney, agriculture indifferently carried on, commerce only beginning, and no revenue; famine ever on the threshold, factions continually alive, public buildings falling into ruin, a few miserable roads commenced, a people depressed by poverty, abased by crime, and utterly careless of religion. He left it with brightening prospects, with an enlivening energy pervading the community, and elevated hopes moving men to vigorous action. The port-dues of Sydney had risen, from 1810 to 1822, from £8000 to £30,000 per annum. A population of 29,783, of whom 13,814 were convicts, now laboured with energy for the public good. From that period the struggles of the colony were less severe, and its strength was greater. Accounts of its resources were circulated throughout Great Britain, men brought home fortunes, and those who emigrated in poverty counted their acres and their flocks by thousands. To trace the progress of the settlement to its present condition through every change of fortune would be an interesting task, but it would be incompatible with our limits. A glance at its actual state, however, is necessary:—

Among the twenty-one counties into which the territory of New South Wales is divided, Cumberland is the most populous and important, though not the most fertile. The capital, Sydney, with the prosperous towns of Paramatta, Windsor, Liverpool, and others, give it pre-eminence. It consists of an undulating plain stretching from north to south 53 miles, and from the base of the Blue Mountains to the coast, which is broken by many creeks and inlets, of which the noble harbour of Port Jackson is the most remarkable. Near the sea the soil is poor and unproductive, but inland the country improves, the woods thin, the valleys become verdant, and the hills excessively fertile. The borders of the Hawkesbury and Nepean rivers are covered with rich soil, spread over extensive flats, finely cultivated. Good water is not plentiful, though by boring wells this might in a great measure be remedied. There are 900,000 acres in the county, of which little more than a third is fit for profitable cultivation. All the good land has been granted away; but a curious fact is, that the greatest abundance of water is found on the most ungracious soils.

The next county southward is Camden, with 66 miles of coast-line, and

a breadth of 55. It is more mountainous than Cumberland, with lofty timber, alternating with tracts of great fertility. Illawara district contains 150,000 acres of fine deep soil, whose rich qualities may be perpetually preserved by a manure of decayed shells found upon the shore. The most delightful landscapes abound in this favoured region, wooded hills, and beautiful streams; while the Shoal Haven River, navigable for ships of eighty or ninety tons, bears its produce to the capital. The 60,000 acres of the Cow-Pastures are now sheep-farms, well watered. There are no important towns in this county.

Next to this is Argyle, a lofty, rugged district, well timbered, but containing many broad, bare levels, like Goulbourn Plains, which are twenty miles long, and ten wide. Two remarkable lakes—George and Bathurst—exist here, supposed to be of recent formation. The natives, indeed, declare that they remember the period when their beds were dry. Bathurst County lies inland, due west of Cumberland, divided from it by the Blue Mountains; it is 72 miles long by 68 wide, approaching in shape an irregular square. Downs like those of Sussex extend along the banks of the Maquarrie for more than 100 miles, and among them Bathurst Plains, containing upwards of 50,000 acres of the most fertile land, with a cool climate that reddens the cheeks of children.

North of Cumberland county is that of Northumberland, measuring about 60 miles by 50. Its general appearance is undulating, with high table-lands among the hills. Here are the coal-mines, near one of the principal towns—Newcastle—with the productive farms which dot the valley of the Hunter—a stream navigable for small craft 50 miles from the sea. Boats may ascend 200 miles, but frequent and violent floods interrupt the navigation. The coal, found in most parts of New South Wales, is most abundant here. A company obtained a grant of the mines from government, and in 1836, 12,646 tons were delivered at the pits' mouth, at 9s. a ton. Steamers, introduced five years before, now ply so frequently along that remote coast, that the demand has enormously increased. In this Land of Anomalies the coal district is the most fertile, for not even the rich vales of the Hawkesbury or Nepean can vie with the borders of the Hunter River. Maitland is the largest town, and its market supplies Sydney with potatoes, tobacco, cheese, and butter. The district is liable to one great evil—namely, the frequency of floods, which often rise forty or sixty feet, pouring through the valley, and sweeping away all traces of cultivation.

Of the counties still imperfectly known, only partially colonised, and almost completely undeveloped, there are—Bligh, Brisbane, Durham, Gloucester, Wellington, Philip, Hunter, Roxburgh, Cook, Georgiana, Westmoreland, King, Murray, St Vincent, Stanley, and Maquarrie. Distributed among the whole are about forty-five 'chief towns,' above which Sydney stands the mistress of them all.

Port Jackson, with an entrance three-quarters of a mile wide, a length of fifteen, and a breadth of three, would afford shelter to fleets of the largest size. Around it spreads a panorama of varied landscapes. Towards the sea are scattered picturesque islets; northward rise long chains of rugged cliffs; southward the wide harbour of Botany Bay extends; and westward the stately forest, broken by occasional clearings, still reminds the spec-

tator that he is in a new country, fresh from nature, with all the features of youth impressed upon it.

The city of Sydney covers a considerable space of ground. It is laid out on a regular plan, with straight streets, crossing at right angles, and adorned with many large and some elegant buildings. Quays, wharfs, and forts, government buildings, churches, hospitals, hotels, customhouses, newspaper offices, barracks, assembly-rooms, post-offices, police-offices, market-places, banks, insurance-offices, chapels, theatres, and a cathedral, adorn streets lively with the rattle of superb carriages, cabs, horsemen, and omnibuses. There is little in Sydney to distinguish it from an English town except the scenery surrounding it, for scarcely a street is not called after some name familiar in 'the old country.' The 'Sydney Morning Herald,' the 'Sydney Chronicle,' the 'Atlas,' 'Bells' Life in Sydney,' the 'Daily Advertiser,' the 'Australian Journal,' and the 'Sydney Guardian,' exist to impress on the settler's mind, that in leaving his mother-land he has not left the luxury of newspapers and leading articles. There is a post-office also, with branches at eighty post-towns, with a charge of from 4d. to 1s. 6d. according to the distance. If, indeed, the reader can imagine a town as large as Brighton, characterised by a mingling of English and Australian features, he will realise an idea of the capital of New South Wales.

In the market-place of this flourishing city we find wheat at 4s. the bushel of sixty pounds, and Indian corn 1s. 6d.; potatoes at £6 a ton; beef at 2d. or 3d. a pound; fresh butter 1s., tea 2s., moist sugar 3d., tobacco 9d., candles 4d., mutton 1½d. or 2d., veal 4d., and bread, best quality, 1½d. a pound. All other articles of consumption are in proportion. Fruit is excessively cheap. Most of the neighbouring counties contribute to supply Sydney with provisions, consumed by a population of 60,000 persons. The most expensive part of living is house-rent, for a moderate habitation, unfurnished, can be hired for nothing less than £100 a year. The number of houses in Sydney is about 7500; and in the whole colony little more than 35,000.

Of the other towns in New South Wales, numerous as they are, a detailed description cannot be afforded. They are all similar to Sydney in plan and aspect, differing only in size and situation, and the character of the public buildings. When we estimate their number, consider the commerce which supports them, and glance at their rapid growth in a region where, sixty years ago, there was not a village standing, it is with excusable pride that we point to New South Wales as an example of national energy.

Sixteen years ago the population of New South Wales was 77,096. In eight years it rose to 173,377, and is now more than 220,000, in the proportion of 60 women to 100 men. The exports average three millions, and the imports more than two millions and a-half a year; while the revenue, now increasing at the rate of £10,000 a quarter, has risen from £183,218 in 1836 to £288,044 in 1849. Sixteen million pounds of wool are annually produced in this colony, where, as we have shown, there existed in 1791 1 ram, 50 ewes, and 6 lambs. Contrasting with that account of live-stock, the following figures appear startling:—98,000 horses; 1,366,200 horned cattle; 6,530,000 sheep; and myriads of pigs, the descendants of that solitary boar which, sixty years ago, represented the species in New South

Wales. Now, if the reader recollects the account of the land then under culture, he will hear without surprise that nearly 200,000 acres are now annually cultivated, producing more than 3,000,000 bushels of grain, and 60,000 tons of potatoes, tobacco, and grasses for hay. It is necessary thus to introduce a few figures in illustration of this interesting subject.

Since 1840 no convict-ship has debarked its corrupting burthen at the harbour of Sydney; and since its emancipation from this curse, the colony has received the right of partial self-government, returning its own representatives. Recently an amended constitution has been granted it, and, blessed with these advantages, we may look to its continued progress among the most prosperous colonies in the world. Vessels continually leave our own shores bound for this 'land of plenty:' but we fear that many are disappointed through the extravagance of their expectation. The earth was given to man, that he should live on it by labour; and the slothful will find, in New South Wales, as at home, that they may wait long at their doors before sixpenny-pieces will fall like the manna from heaven.

The colony contiguous to New South Wales is *South Australia*. It was originally projected in 1831, when a committee was formed in London for establishing a chartered company to settle the country. The project failed; but three years later another association applied for an act of parliament to erect South Australia into a British province. Meetings were held, the preliminary arrangements were carefully made, and a colony was established. Its territory extends from the 132d to the 141st degree of east longitude, and runs up northward as far as the 26th parallel of latitude. There was for some time a discussion as to boundaries; but the governments of Adelaide and Sydney have amicably adjusted the point, and marked a line to a distance of 123 miles from the coast. The shore is wild, and broken by many bays, into which the Southern Ocean rolls in tremendous breakers. In the waters of Encounter Bay—always white with foam—a successful whale-fishery is carried on. The first settlement formed by the South Australian Company was at Kingscote in Kangaroo Island, off the shores of the Nepean Bay, at the mouth of St Vincent's Gulf. A town was laid out, and some houses built; but the place was officially abandoned some years ago, though a pretty seaport town remains, with a good harbour. Penetrating the gulf about seventy miles, we reach Port Adelaide, and landing, proceed towards the town. Villages, cottages, and farms are scattered over the monotonous flats, and after traversing the swamps near the sea, the emigrant finds himself on the Park Lands, rich and beautiful, where Adelaide stands on the first elevated ground. Westward lie the plains of Adelaide, with the sea running up St Vincent's Gulf; eastward a richly-wooded country extends down to the valley of the Murray, beyond which spread forest and plains as far as the heights of 'Lofty Range.' Lower down, and separated by the valley of the Torrens from the upper town, stands South Adelaide on a flat surface. It is large, and densely built, and forms the commercial division of the city, containing the government house and other public structures. Some handsome edifices have been erected; and Hindley Street and Rundle Street would do no discredit to a second-class city in England. Churches, schools, banks, and other buildings decorate the broad thoroughfares, and outside

a promenade, half-a-mile wide, runs round the city. Its inhabitants here enjoy the mild evenings, and crowd upon it, like our own citizens in the parks, with cheerful faces, doubtless sometimes contrasting their position with that of those whom they have left behind to struggle with extravagant competitors in the mother country. Little more than twelve years have passed since the first wooden dwelling was erected on the spot where now stands Adelaide, the capital of South Australia.

The general resources of the colony are considerable. The copper mines of Kaprunda are supposed to be immensely rich, and other minerals have been discovered which may be expected to form the materials of future prosperity. The climate is favourable to the growth of fruit, even of the tropical kinds. The loquot, the guava, the orange, and the banana, flourish well, but slowly; while the vine, the fig, and the pomegranate attain a superb maturity, with English fruits of every description. The climate of the plains is altogether different from that of the hills: while the latter are white with snow, the former are warmed by a glowing sun. On the lowlands the forest-trees of Europe have a stunted growth, but in elevated situations they thrive to perfection. Gooseberries and currants also bear only on the hills. Two extremes of climate prevail in South Australia: in the early part of the year the rains fall copiously, the whole land is brightly green, and vegetation thrives in luxuriant richness; later, the sun is intensely hot, the earth is almost herbless, millions of grasshoppers swarm over the ground, but the air, though hot and calm, is breathed without difficulty. In August the thermometer ranges about 59°, and rises till January, when it is often 106½°, descending in July to 55° at two P. M., the hottest hour of the day. This climate is exceedingly salubrious; even the most heated winds are light and agreeable. It is of course subject to the ordinary maladies common to most regions; but there are no dangerous indigenous complaints, and it is, in the opinion of a well-informed traveller, 'one of the healthiest countries in the world;' but it is important to remember one fact, a universal knowledge of which might have kept death out of many homes—that the climate of South Australia and of Sydney is fatal to persons of consumptive habits. As in New South Wales, the summer of Europe is winter here, and the winter summer.

The soil of this colony is not better than that of New South Wales, and inferior to that of Van Diemen's Land, yet the crops produced in it are finer than those of the other provinces. The agriculturists of South Australia, less dependent on pasture, have applied themselves more studiously to cultivation; and the most magnificent specimen of wheat ever exhibited in our markets was grown by them. The province contains an area of about 324,000 square miles, or in round numbers 207,000,000 acres. The settled territory, however, occupies no more than 4000 miles, or 7,000,000 acres, and even in this a large portion of country, at present desert, is included. About 500,000 acres have been purchased for cultivation, besides large tracts for sheep and cattle pastures. The rate of progress in the colony may be indicated by a few facts:—In 1845, 18,848 acres of wheat were sown; in 1846, 26,135; while oats increased 7000 acres. In one year 400 names were added to the list of landed proprietors. The produce of the colony, therefore, exceeds its capability of consumption, so that, while in 1839 the price of flour in South Australia was £120 a ton, it is now

about £12. The increase of stock was equally rapid: cattle and sheep stations were established immediately after the formation of the colony, and the wild nutritive herbage so abundant gave nourishment in 1844 to 356,700 sheep; in the next year to 480,669; and now to about 1,200,000, with an increase of 200,000 annually. There are in the colony also about 80,000 cattle imported principally from New South Wales, with 6000 horses, and about 25,000 pigs and goats.

Though not so rapid in its recent development as New South Wales, South Australia prospered better during the early years of its existence as an English colony. The encampment at Rapid Bay, with the rude gardens at first laid out, were soon abandoned, though some traces of them may still be seen, as well as some curious ovens scooped in the banks by the first settlers. The situation was deserted for the site of the present capital, planned on an extensive scale. A thousand acres were surveyed—seven hundred on the south, and three hundred on the north of the river, and the streets, crossing at right angles, are from one to two chains in width. No convicts were ever allowed to be imported. All religious denominations were encouraged by an equality of rights. The town-lots were put up at £2, 10s. an acre, the country at £1—half the money thus raised being added to the colonial fund, and half applied to bring out labourers and mechanics. The value of the town-land has risen to £1000 an acre. After the first, new settlers continually arrived, flocks of sheep and herds of cattle were brought from Van Diemen's Land, and every artisan skilled in house-building was engaged at wages varying from seven to ten guineas a week. Men earned much money; but uneducated poverty, suddenly prosperous, is apt to run into excess; and sawyers and splitters, earning in two days enough to riot on all the rest of the week, drank rum and beer until an empty pocket induced them to resume work. Bullock-drivers, and others of their class, became dainty, and drank only claret and champagne; while many, who in their own country wanted the necessaries of life, staked £50 on the toss of a halfpenny. The sale of liquor was a prosperous trade. One publican made £10,000 in three years. While this factitious prosperity endured, hardy Bushmen from New South Wales came down to Adelaide with their flocks and herds to sell, cows at £40 each, bullocks £100 a pair, meat at 2s. a pound, bread at half-a-crown the four-pound loaf, flour at £120, and potatoes at £30 a ton. Thus things stood for some time in 1839. All was done on a large scale. Surveyors marked the land in a circle of twenty-five miles into lots, which were bought by speculators, who drew clever plans, marked Islington, Kensington, Brighton, Paynham, and Walkerville, and advertised them as town-lots. A mania followed. People ran deeply into speculation, money flowed like water, and excitement rose to a spring-tide of excess. As usual, panic trod on the heels of this pernicious fever, and in 1840 hundreds of labourers crowded the streets of Adelaide, begging for employment at the lowest rate of wages. The colony became involved in debt, and when Governor Grey arrived in 1841, all credit was destroyed, and ruin hung over the settlers. The government expenditure had risen to £180,000. In two years an honest administration reduced it to £30,000, though a loan was effected from New South Wales, and public works were commenced to prevent the poor from starving.

Farming operations had not been vigorously commenced; but now, when the mania was over, and wholesome industry revived, families settled in the bush, lands were bought, cleared, and fenced, put under cultivation, and covered with magnificent crops. Hedgerows lined the roads, cottages dotted the fields, stacks and ricks sprung up, reapers and sowers multiplied, the plough went through the furrow, and before the end of twelve months provisions became abundant. In two years more the colony, with brightening prospects, took rank with the other Australian settlements.

The seaport lies several miles from the town, and is connected with it by a good macadamised road, traversed every hour by passenger cars—(fares, sixpence). A spacious basin, lined with wharfs, receives the shipping; and along the highway teams of oxen are continually moving, carrying British manufactures to the town, or Australian produce to the port. There are several good inns on the roadside, with ruddy-faced barmaids—everything, indeed, familiar to the English eye, except the landscape and the people; for the newly-arrived emigrant would never recognise in the stalwart fellows, well mounted and clothed, who ride to and fro over their own farms, the thin and sickly creatures who would at home have broken stones in the yard of a workhouse.

Round Adelaide lie three principal divisions of the colony: the north, or sheep, cattle, and great mineral district; the east, famed for agriculture and pasture; and the south, combining cultivation, rearing of cattle and sheep, fishing and mining. A vast quantity of level land, covered with crops of rich grass, and unencumbered with trees, affords the finest pasture. In 1843 lead and copper were discovered, and now gold is also known to exist in many parts of the colony. The discovery of these treasures, instead of producing its legitimate effect, caused another mania. The fields were deserted, and every one turned miner. A prospect of scarcity hung over the colony. A noble harvest was ready to bend before the sickle, but the community was mad with the rage for mining, while the winter threatened to close in and cut off the promise of land. Enormous sums were offered for reapers. 'Gentlemen and ladies sallied forth with sickles, even with scissors,' to save the harvest, and the military and police were called out. They marched in battalions, and attacked the standing corn; great exertions were made; many granaries were filled; but over hundreds of acres the ripe grain fell and rotted to the earth. But this fever was of brief duration, and we now witness in South Australia the spectacle of an industrious community of settlers with a profitable division of labour—some at the mines, some in the fields, some in the pastures, engaged in developing to their own advantage the resources of a wealthy soil. The population within the last ten years has risen from 10,115 to 38,666—or 286 per cent. An increasing commerce is carried on with the mother country, which in the first six months of 1850 exported to its young offspring as many yards of cotton cloth as to the whole of Denmark.

Western Australia, at the Swan river settlement, is another English colony. It is situated on the western coast, nearly opposite New South Wales, and 36 degrees of longitude to the westward of it. The place was discovered in 1697 by the Dutchman Vlaming, who named it from the black swans found floating on the stream. The first settlement took place

in 1830, in somewhat an unusual manner. A few private individuals, in consideration of immense grants of land, undertook to colonise the province, on condition of restoring the grants if their engagements were not fulfilled within a given time. Great difficulty was at first experienced, but Western Australia, like her sister colonies on the same mighty island, has struggled through her difficulties, and promises soon to prosper well. Beyond a line of barren country bordering the sea the land is very fertile. In the neighbourhood of the principal settlements, Perth and Freemantle, it is hilly and bare; but most of the poor soil is capable of improvement, and admirably adapted to the cultivation of the grape. There is a vine in the government garden at Perth, which, planted as a cutting, sent forth shoots 16½ feet long in the second year, and yielded more than four hundredweight of fruit. The climate of this productive region is salubrious and pleasant, though not, as some writers assert, superior to that of the other colonies. The rains are more abundant and regular; but while this fertilises the soil, it does not favourably or otherwise affect the atmosphere. The waters on the coast swarm with fish, and whales gambol in shoals a few miles from the shore. Oil is therefore a principal article of export, and the enterprising Americans have sometimes engaged as many as 300 ships along these distant shores.

Freemantle is a port town at the mouth of the Swan river. Two miles up is Perth, the capital, and seven miles farther, Guilford, where the rich corn-lands commence. There are several other settlements, all in steady and vigorous, if not rapid growth.

In 1838 two British vessels sailed to colonise Port Essington, on the northern coast, where one or two attempts had already been made without success. The situation of the new settlement is at the utmost point of *North Australia*. There was found, to the astonishment of our countrymen, a community of Australian Christians, with churches of their own, which had already elementary instruction in the arts of civilisation. To the Dutch belongs the praise of thus planting, at this remote point, what may be the seeds of a great change in the condition of the native people. We have now a settlement there which, like the others, thrives with considerable success. There is a splendid harbour, capable of sheltering the largest fleet. The soil of the territory—by some described as very poor—is in reality very productive. Industrious settlers could cultivate with much success crops of rice, cotton, and indigo of the finest quality: but there is one drawback—the climate. This, though not in itself unhealthy, is unsuited to the European constitution; though it is believed that when the seasons, atmospheric changes, and other peculiarities of the place are thoroughly understood, temperance will destroy the virulence of the ground fever. Abundance of fresh water exists, and already, from the little beginnings described, this settlement develops towards prosperity.

Among the continental nations it is believed to have been established with purely political views. The French especially describe it as the opening of a port to the south of the Indian Archipelago, near the Dutch possessions, to counteract the influence of Holland in those seas. However this may be, it is certain that the Malay trade is expected to be attracted thither, and that already many a fleet of Indian prahus, laden

with tea, sugar, salt fish, and other commodities, come to bargain for British cottons. As at our new settlement of Labuan, many opportunities of profit occur at Port Essington without effect, from the absence of European merchants to take advantage of them. At either place an enterprising trader, with £2000 or £3000 at his command, could speedily realise a fortune by trading with the Malays. From an early date the rude vessels of the Indian islanders have visited this coast in search of sea-slugs for the Chinese market. They would gladly collect for Port Essington the costly products of their islands, and barter them for cottons and utensils of rude earthenware. An account of their ancient traffic carried on between the Indian islands and the northern coast of Australia would afford a most original picture of human industry, but we are compelled to forego it, and pass to the concluding portion of our subject.

Outlying the southern coast of Australia, as Ceylon outlies the Indian continent, *Van Diemen's Land* appears, separated from the mainland by a broad channel, known as Bass's Straits. Numerous islands are sprinkled over these mid-lying waters—some inhabited, others so surrounded by reefs, and so beaten by surges in eternal commotion, that they are unapproachable. The most northern point of Van Diemen's Land is about 120 miles distant from the most southern point of Australia. The country is equal in size to Ireland, more mountainous than the great neighbouring region, more full of variety, and graced with more charms of scenery. The hills, varying in elevation from 4000 to 5000 feet, do not run in unbroken ranges, but are crossed by fine valleys, watered by many beautiful streams. Limestone abounds, and iron and coal will probably be discovered in large quantities. Where cultivation has commenced, the soil is found to be partly a rich vegetable mould, partly mixed with sand and flint, but almost everywhere fertile. The coast is diversified—here projecting in promontories, there retiring into bays, with many commodious harbours, and the mouths of some considerable streams. The Derwent, on whose border stands Hobart Town, on the south of the island, is a broad, deep, salt-water stream, free from rock or shoal, and navigable for vessels of heavy burthen. On the north, the Tamar pours into Bass's Straits, with Launceston near its mouth—a convenient port, though obstructed by a bar. These two towns, the twin capitals of the colony, are situated in the midst of beautiful scenery—the one under the shelter of Mount Wellington, the other in the midst of a gently undulating country, varied with woods and pasture-lands. Their progress has not been regular, the southern outstripping the northern city in commerce and industry, though Launceston now promises to attract considerable trade to the Tamar river.

From the date of Tasman's* visit to Van Diemen's Land (1642), no European vessel sailed thither during 130 years. In 1773, Furneaux, one of Cook's captains, coasted along the eastern shores, and entered Bass's Straits, to ascertain whether the territory was an island or a part of Australia Proper.

* Many efforts are made to endow this island with the name of its original discoverer. The colonial bishop was sent out, not as lord spiritual of Van Diemen's Land, but of Tasmania. It is difficult, however, to change the public custom in this particular. America has retained its beautiful name, though justice has constantly suggested its alteration to Columbia.

Stormy weather drove him back, and the discovery was left to Bass. In 1777 the great navigator himself visited these shores, and carried on some intercourse with the natives. Years later, La Perouse is supposed to have come hither, and the expedition sent out in search of him explored the coast in quest of some memorial that might throw light on the fate of the unfortunate navigator. In 1797 Bass's Straits were first navigated; and Flinders, who accompanied the discovery of the passage, circulated in the new colony at Port Jackson the idea of forming a settlement on Van Diemen's Land. The plan was neglected until 1803. The French then evinced an inclination to secure the prize, and to forestall them, a small party of soldiers and convicts was lodged on the island. A site was chosen near Hobart Town. The usual preliminaries were gone through, but unhappily the Europeans and the natives quarrelled. Blood was shed, and an ill-will was established which has only lately ceased to rankle in the breasts of the aborigines.

The early years of the colony were passed in the ordinary manner. Many difficulties arose, and several conflicts took place with the natives; but the settlers were hardy, their numbers increased, the soil was fertile, and the colony prospered well. A legislative council managed the public affairs, and by 1831 the excess of revenue over expenditure was £20,000; a fair standard of the condition of the colony. Next year, at a large meeting, it was determined to petition both Houses of Parliament for a representative assembly; a privilege which was not granted for some time. Colonial policy forms one of the most difficult and important of the statesman's studies; and it is only of late years, with the experience of great misfortunes before our eyes, that we have commenced acting on the principles whose universal acceptance can alone render our distant possessions the permanent sources of prosperity.

Van Diemen's Land has been a great convict colony. In 1832 there were 11,040 male criminals on the island. Of these 921 were undergoing severe punishment for offences committed after sentence. Two hundred and forty were at the penal settlement of Port Arthur, on a barren peninsula, connected with the main by a narrow neck of land. Across this runs a line of posts guarded by savage dogs and some soldiers, to prevent the escape of the culprits. Nevertheless some do evade even the vigilance of the brute watchers; and we have heard of several men who, clothing themselves in the skins of kangaroos, and imitating the motions of the animal, thus contrived to escape.

For a long period the abundance of convict labour was an evil, especially as men were draughted into the farms on tickets of leave, to perform tasks for which they were utterly unfit. A free settler once received the allotment of a convict set down as a ploughman. 'Can you plough?' he inquired. 'No.' The man was a weaver, but his master employed him to drive a cart. The first day he broke the vehicle to pieces; the next, intrusted with another, he snapped the pole; and the third lost it in a swamp. He was then directed to cut down a large tree overshadowing a barn, and performed the office with vigour, letting the huge tree fall directly across the building, which it crushed to total ruin! But where willingness accompanies this ignorance, the case is not so bad. In some instances, however, the convicts refused to work at any other but their

proper avocation; and one weaver, who was ordered to root up trees, hewed off his arm with an axe rather than comply. As household servants, they answered better, though, with such recommendations to character, the colonists could little be expected to trust their servitors. One gentleman wrote home—'Even in our small ménage our cook has committed murder, our footman burglary, and the housemaid bigamy!' It is only fair to qualify this extract by quoting a remarkable passage which follows:—'It is strange to be in a country of thieves at all, but still stranger to be there without any fear of having your pocket picked. Such is the admirable arrangement of the present government.'

From various causes there was a few years ago a vast superabundance of labour in Van Diemen's Land. The consequences were very disastrous, but an influx of capital now promises to remedy these evils. The resources of the island are varied and extensive, and it will be long before its population increases to an extent commensurate with its natural capabilities. A change also is drawing over the spirit of our colonial policy, which cannot be without effect on the welfare of our Tasmanian settlements. All, indeed, that they require is the energy of man prudently directed; for nature has done her part to perfection. The island being nearly the antipodes of our own country, the seasons are almost exactly the reverse of ours. The cold is, however, more extreme, both from the vicinity of the southern pole, and the fact, that no land lies between the southern coast of the island and the masses of eternal ice that load the sea a few degrees beyond. A clear and brilliant atmosphere, dry, pure, and elastic, almost invariably prevails, though occasionally the weather is fitful, and changes from heat to cold within the revolution of a day. In the western districts much rain falls, on the northern less, on the eastern still less, and on the southern least of all—not averaging more than fifty or sixty wet days in the year. September, October, and November are the *spring months;* December, January, and February correspond with our June, July, and August; March, April, and May form the autumnal, the most agreeable season; and during our hot season, frost, snow, and rain prevail in Van Diemen's Land. The shortest day (21st of June) is eight hours and forty-eight minutes, or one hour and four minutes longer than the shortest day in England (21st December); but the longest day in England is an hour and twenty-two minutes longer than with them. The climate, even now in the uncultivated condition of the country, is remarkably salubrious. In comparison even with the healthiest parts* of Europe it is unusually genial, and its salubrity will in all likelihood increase as colonisation spreads over the unexplored districts of the island. Fever and dysentery sometimes prevail; hooping-cough was introduced among the female convicts, but though it attacked all the population, not one fatal case occurred; and influenza, common at times, never becomes dan-

* It has been calculated that in the Roman States and ancient Venetian provinces 1 in 27 dies annually; in all Italy, Greece, and Turkey, 1 in 30; in the Netherlands, France, and Prussia, 1 in 39; in Switzerland, Austria, Spain, and Portugal, 1 in 40; in European Russia and Poland, 1 in 44; in Germany, Denmark, and Sweden, 1 in 45; in Norway, 1 in 48; in Ireland, 1 in 53; in England, 1 in 58; in Iceland and Scotland, 1 in 59. It would be interesting to make a similar calculation with respect to Australasia.

gerous. The only affliction most severely felt is insanity; but it has been well remarked by a writer on the subject, that this can be traced to the excessive use of ardent spirits. During a long period the amount consumed in Van Diemen's Land was at the rate of five gallons a year to each individual, including women and children.

The island is divided into two counties and fifteen districts. The fertile lands are distributed over the whole, in alternation with rugged mountains and dense woods. Numerous streams, bordered with rich land, intersect its surface, fed from perpetual springs, as well as by the snows which, during many months in the year, crown the loftier peaks. Hobart-Town district is the most important, but, like that of Sydney, not as the most fertile and extensive, but as containing the metropolis of the island. It contains about 250,000 acres, and the cultivated soil yielded in 1829 an average return of fifteen bushels of wheat, twenty of barley, twenty-five of oats, twenty of peas, twenty of beans, three tons and a-half of potatoes, or seven tons of turnips an acre. Since then its productiveness has greatly increased. The produce of wheat is nearly thirty bushels an acre, and of other grain in similar proportion—an example of the effect of careful husbandry. A brisk trade is carried on at Hobart-Town, where a motley population is now continually on the increase. Between 1839 and 1847 it rose from 44,121 to 70,164, or 59 per cent. Scots with Highland kilts and claymores, Irish peasants with blue jackets and trousers, Frenchmen, Germans, Americans, Chinese, Malays, Lascars, black aborigines, Africans, and elegantly tattooed New Zealanders, jostle in the streets, and crowd about the stores. At these depôts are sold all imaginable articles of use, to which public attention is attracted by advertisements in the local paper. A specimen of these may be amusing:—'At the store of the undersigned. —For sale—Cart-harness and cayenne pepper, drill trousers, crockery-ware, one lady's side-saddle, one very strong dray, gold and white cambric, four circular saws, ladies' stays, starch, blue and soap, Leghorn hats, shot, mustard, pattens, black stuff and bombazines, nails and iron pots.' Prices in Hobart-Town are not remarkably low.

The produce of the soil is varied. Of timber fit for shipwrights, builders, and cabinet-makers, there are gum, stringy bark, white and yellow thorn pine, and sassafras; black and silver wattle, dark and pale lightwood, pencil cedar, Adventure-Bay pine (a peculiar species), cotton-tree, musk, silver-wood, myrtle, forest and swamp oak, plum-tree, yellow-wood, lignum vitæ, red and white honeysuckle, peppermint-wood, pink-wood, and cherry-tree. No native trees bearing edible fruit have been found. The peppermint-tree affords an oil efficacious in cholera; a kind of grape that grows near Maquarrie Harbour, on the west, yields a juice equal to that of the lime for scurvy; the leaves of the tea-plant are not much inferior to those of China; and the bark of the wattle is useful for tanning. European fruits, however, supply the absence of any indigenous species. The grape, the apple, the peach, the cherry, the apricot, the nectarine, the greengage, the pear, the raspberry, the mulberry, the gooseberry, the currant, the strawberry, the quince, the walnut, the chestnut, thrive well, some requiring care, others none. Many beautiful flowers, finely scented, have been discovered, and many others have been introduced.

All kinds of grain cultivated in these islands will flourish in Van

Diemen's Land. Potatoes of the first quality are produced, though not so plentifully as in England; mangel-wurzel and turnips thrive well, with clover, tares, lucern, sainfoin, sweet-scented vernal, and indeed most of the English grasses. Sheep fatten well on the native kangaroo grass. Hemp, flax, and tobacco are also produced, with peas, beans, cabbage, broccoli, cauliflowers, spinach, carrots, parsnips, asparagus, beet-root, artichokes, lettuces, cucumbers, celery, radishes, onions, leeks, and shalots. With this abundance of vegetable produce, capable of still further development, the island will be able at all times to support whatever population may spring up to crowd its commercial cities and cultivate its rural lands.

Horses, asses, and mules, black cattle, sheep, pigs, and poultry, flourish as well as in New South Wales. The native zoology, as in that province, consists of the kangaroo, in five species — from the forest kangaroo, standing five feet high, and clearing fifteen feet at a bound, to the kangaroo mouse, considerably smaller than a rabbit. The flesh of these animals is much esteemed. There are numerous varieties of the opossum; and there is an animal between a tiger and a hyena, very destructive to the flocks. The 'devil' is another carnivorous beast, shaped like an otter, which attacks the sheepfolds at night. Porcupines, wild cats, and weasels, with bandicoot rabbits and rats, exist; but not in great numbers. The ornithology of the island is also in some respects similar to that of Australia, but belongs to a higher order. The emu, found on both islands, is the largest bird known in those regions, weighing sometimes as much as a hundred pounds. Around the coast, during the breeding season, great numbers of whales resort, and the fishery is valuable and productive, oil forming a considerable article of export.

As of all the other British settlements formed in Australia, we may say of Van Diemen's Land that it is still in the infancy of its existence. Large tracts remain unexplored, the capabilities of the soil have never been completely tested, and the universal wealth of the country is scarcely at all known. With every year we may look for an increasing prosperity; and if no speculating manias occur again to convulse and derange its system of industry, the colony may one day rank among the foremost of our dependencies, as a brother in a great union of which each member contributes to the welfare of the rest. With a climate of the finest kind, with a rich soil, and every facility for the construction of a railway from Launceston to Hobart-Town, its great distance from England should be no objection in the eyes of the emigrant. The sea once crossed, what matter whether three or thirteen thousand miles of water roll between the new home and the old? Steam will soon rivet the links of intercourse between the British islands and Australia; and a monthly Indian mail arriving with intelligence from the remote south, the difference of a few days will be all in the communication between this country and any of her transmarine dependencies.

The general value of our Australian colonies must not be estimated wholly in a commercial point of view. It is as fields of emigration, homes for our surplus population, outworks of our magnificent empire, that they are also important. The crowds of our too densely peopled cities landed on those fertile coasts may plant new towns on every part of the great

island. They may clear away the woods, bore the mountains, fill the harbours with commerce, and cover the long-neglected lands with harvests, or fatten upon them millions of sheep and cattle. They may draw within the circle of their own civilisation the barbarous aborigines, of whom it has been said that they are destined to be swept off the face of the earth by the advance of the white race. We have already doubted the truth of this view, and many circumstances concur to support an opinion which humanity would find it hard to abandon. In more than one instance a white man has taken a wife from among the natives; several of them are employed in agriculture; and on the northern coast, it will be remembered, a small community of Australian Christians existed before the settlement of Port Essington was founded. Anecdotes could be multiplied to infinity, tending to show that the native heart is rich in the feelings of humanity; darkened and deformed, indeed, by the violence of untrained passion, but still deep and warm, as when fresh from the fount of life. With all nature around him a mystery to his unenlightened mind—with only the faintest ideas of a Deity—with utter ignorance of the past, and scarcely a hope for the future—the Australian savage has wandered for ages among woods and deserts, until he has become the reflection of the savage nature spread everywhere around him. Contact with Europeans has already, in many instances, induced in him a cultivation of those feelings, originally fine, which, untrained, degenerate into the wildest passions. In Van Diemen's Land, the natives, after hostilities with our countrymen, entered into agreement with them, and have preserved faith. There are indications of a nature too much resembling the nobility of man to be consigned as incorrigible to its original debasement. When we find writers arguing that a whole race must perish because incapable of civilisation, we feel inclined rather to doubt their humanity than to share in their philosophy, and yet the history of America and the fate of its aboriginal races must teach us to express ourselves with caution.

If, therefore, the establishment of British colonies in Australia lead ultimately to an intercourse of friendship with its native population, this will not be the least triumph of our civilisation. The first process must be to enlighten the savage in his own nature, to teach him he is a man, to inspire him with self-respect, and infuse into his breast a desire for the advantages which he sees possessed by the white strangers. Then convince him he has friends, and do for him the office of friendship, and in the end will be realised the old poetical proverb—'Cast thy bread upon the waters, and thou shalt find it after many days.' During the recent surveying voyage of the *Beagle*, Captain Stokes discovered on Depuch Island, on the north-west coast, numerous drawings on the rock, the work of native artists. They were executed by removing, according to the figure desired, the hard outer coating, of a red colour, and baring to view the bright greenstone beneath. In many of these representations much ability was displayed, and enormous numbers of them were observed, some fresh, others weather-worn, representing human figures, animals, birds, weapons, domestic implements, and scenes of savage life. This lonely picture-gallery was uninhabited, but the natives frequent it at a certain season of the year, to admire their forefathers' skill, and leave monuments of their own. Doubtless the Australian chiselling the stone expended on his work as

much labour and patience, and felt in it as much pride, as the famed artists of Italy decorating the walls of St Peter's or the Vatican. Doubtless, also, there are critics among them, whose verdict is eagerly looked for; and the savage probably delights as deeply in the admiration of his rude countrymen as man in civilised regions enjoys the approbation of his. 'Wherever we discern,' says Captain Stokes, 'the faintest indication that such a principle is at work, there we may hope that development will ultimately take place. Until we find a nation which has never attempted to emerge from the circle of its mere animal wants—which has never exhibited the least inclination to develop the most ordinary arts—which not only rejects clothing, but is absolutely indifferent to ornament—which leaves its weapons unadorned, its skin unpainted, free from tattoo—we must not despair of the general efficacy of civilisation. These savages of Australia, as we call them, who have adorned the rocks of Depuch Island with their drawings, have in one thing proved themselves superior to the Egyptian and the Etruscan, whose works have elicited so much admiration, and afforded food to so many speculations—namely, there is not in them to be observed the slightest trace of indecency.'

As the consumers of British manufactures, supplying us in return with many valuable commodities, the Australian colonies rank high in the list of countries with which we hold commercial intercourse. By a calculation made more than a year ago, and which may now be considered as below the reality, we are enabled to form an idea on this point:—In Prussia the inhabitants consume each to the value of 6d. of British manufactures, in Russia 8d., in France 1s. 6d., in the United States 5s. 6d., in Canada £1, 15s., in the West Indies £2, 17s. 6d., at the Cape of Good Hope £3, 2s., and in Australia from £7 to £10. Should the population of these settlements—amounting altogether to about 350,000—therefore increase during the next half century as it has increased during the last, we may expect an enormous impulse to our industry, and consequently a great accession to our general prosperity as a nation.

THE LONE STAR.

I. -The Departure from Port.

MANY years ago, not long after the death of Cromwell, and while the West Indies were still infested by a lawless crew of outlaws from all nations, a full brig took her departure from Bristol, bound for Jamaica, with a cargo of considerable value, and numerous passengers, emigrants, and others. The *Royal Charley* was a sound brig of 400 tons, a good sailer well-armed, and tolerably well-manned. Her captain was a weather-beaten tar, who knew almost every sea where the English flag had yet waved, and his passengers felt a proportionable amount of confidence from their knowledge of his experience. There were on board several personages of very ordinary character but only a few connected with our narrative, and to these alone can we now refer.

Mr James Bowen was a wealthy proprietor going out to reside permanently in Jamaica, accompanied by his daughter, a nephew, and several workmen whom he had selected for their intelligence and honesty. This gentleman was one of those straightforward, frank Englishmen who please at a glance, and whose lives of utility and perseverance prove as useful to those around them as they are profitable unto themselves. His wife had been an excellent and worthy woman; but after being his partner for nearly thirty years, she had recently died, leaving him an only daughter, who was now a very beautiful girl of about two or three and twenty. Well-informed, accomplished, and extremely fascinating, she seemed formed by nature to prove the delight of her parents, and the pride of him who should win her maiden affections. But Eleanor Bowen was a romantic girl, given to melancholy moods and reverie: having formed in her own mind a model of a man, she had as yet found no one to come up to her ideas —a very common occurrence when people expect anything unreasonable. Fond of romance and poetry, well-read in Chaucer, Spencer, Shakspeare, and even Milton, Eleanor dearly loved mystery and ideality. A plain, positive man would never have done for her, and yet Henry Postans, her cousin by the mother's side, who accompanied them on their journey, was plain and positive enough, and he was the only serious suitor she had yet had. Henry was Mr Bowen's only male relative. The child of a young and favourite sister, he had been educated as a clerk, and when old enough, had been taken by his uncle as a junior partner. He had in early youth

been used to poverty, but since eighteen, his uncle's generosity had made him independent enough; and now that a marriage between him and Eleanor was projected, brilliant indeed was the prospect before him. The sole inconvenience was, that his cousin had flatly rejected him; but this the young man regarded only as coquetry, which time would get over. As he really loved her, he lived in hope.

Before starting, royal officers came on board and carefully examined every passenger. A leading officer of Cromwell's had been denounced as in England, and about to escape, and the vigilance of the officials of every port was great. The list was gone over, the vessel searched in every imaginable quarter, and then the anchor was weighed, the sails loosened to the breeze, and the *Royal Charley* started on her way. It was a lovely May morning, and Eleanor sat on the raised quarter-deck watching the evolutions of the crew and the physiognomies of the passengers. The crew was motley enough in character, but her eye at once singled out one among them who certainly formed a marked contrast to all his companions. He was a tall handsome man of about thirty, with expansive forehead, eyes that pierced to the very heart, and a look of command which could not be mistaken. The young lady could not keep her eyes off him. From the time of the loosening of the sails, he had been busy everywhere, below and aloft. He hauled the ropes and halyards as if they had never been out of his hands, and yet his gait was to all appearance far more that of a soldier than a sailor.

About two hours after leaving Bristol, and after a long look round the horizon, Eleanor noticed him come aft, pass the captain, who bowed, she thought, with unusual respectfulness, and go down into the cabin. Our romantic young lady's ideas were at once excited. There was a mystery to unravel it was quite clear, and she could not help rejoicing at a circumstance which promised to take away from the tedious monotony of a sea voyage. Something to think about is almost as good as something to talk about or see, and what with her favourite poets and her mysterious sailor, Miss Bowen began to fancy she might pass the time of her journey pleasantly enough. She had been at sea too often to have the diversion of sea-sickness, which usually occupies a week with sensitive people, and the stranger was quite a godsend.

While these thoughts were in her mind the sailor came up on deck, but far differently clothed. He wore a semi-Spanish costume, with slouched hat and plumes, a sword and brace of pistols—all showing off a most remarkably handsome face and elegant figure. He advanced towards the group formed by the captain, Mr Bowen and daughter, Mr Henry Postans, and some other passengers, bowed politely but rather haughtily to them, hastily fixed his black eyes on Eleanor, and then passed them to lean his folded arms on the bulwarks, where he sunk into a deep reverie. All the passengers were puzzled, while the young lady's heart quite beat with excitement. It was clear that she had fallen upon a genuine, undeveloped mystery, and she considered herself a very happy woman.

'A good leading breeze this, captain?' suddenly said the stranger, turning round; 'and one that, if it would but last, might run us to port in forty days.'

'True, sir, true; but winds are variable,' replied the worthy skipper with

a smile and a bow; 'and we'll be very apt to find it contrary before the week's out.'

'Before night perhaps,' continued the stranger, after a steady and careful examination of the heavens. 'There's a south-easterly look about the sky I don't at all like. Perhaps it may keep off until to-morrow, but crack on everything, Captain Montrose, if you would get off the land. Shove out the studding-sail booms, and loosen royals.'

'Ay, ay, sir!' replied the skipper, with whom the stranger's word seemed law.

'Wait a while!' cried the other quickly, looking down to leeward, and lowering his voice; 'there's a sizeable craft yonder trying to get to windward of us, and maybe she's no good. Haul aft the starboard braces; helm a-weather.'

The captain immediately followed his directions, which immediately brought the stranger astern, and the brig lay down to a pretty stiff breeze, going through the water with considerable rapidity. It soon became evident that the vessel behind was a man-of-war in chase, and the captain and stranger exchanged significative glances.

'We must keep on this tack for another hour,' said the stranger; 'keep her rap full; don't lift the sails, boys. She'll stand the breeze, never fear. She's a good ship, and minds her helm.'

The skipper now drew the other on one side. An animated conversation ensued. The tone of the captain was respectful, and even rather imploring; the other's was calm and commanding. Presently they looked over the stern.

'Her poop is now clearly visible,' exclaimed the skipper; 'an hour ago I only saw her maintop. She's gaining ground fast.'

'She can't reach us before night, captain, and then we'll be amid the shoals and rocks I wot of, where she will never follow. Trust to me. I defy the myrmidons of the man Stuart.'

'Hush!' said the skipper in alarm. There was no one near, however, but Eleanor, whose eyes were fixed curiously on the white sails of the stranger vessel; and who, although she distinctly heard the words, made no sign of having done so.

Hours passed without producing much evident change in the state of affairs, though it was clearly visible to an experienced eye that the man-of-war sailed at least a knot an hour better than the merchantman. But it was dark, and there was no moon until midnight. On this both captain and his mysterious passenger counted for safety.

The cabin passengers supped together, and when they came on deck it was dark. High land was clearly visible ahead, however, despite the gloom. The stranger took a keen look around, and then, standing by the captain on the quarter-deck, gave his directions in a whisper.

'All hands about ship—tumble up—down with the helm—tacks and sheets—mainsail haul—belay!' were orders as rapidly obeyed as given; and then when the brig forged ahead, according to a plan previously arranged, dead silence prevailed, not a light was allowed to be shown, and the *Royal Charley* went back almost the way she had come. Presently the stranger sprang quickly to the wheel.

'Square yards!' he shouted; 'haul up the weather clue of the mainsail.'

The skipper himself ran to obey, and in five minutes the *Royal Charley* was right before the wind, with foaming breakers right and left, and but a narrow channel in which she could move. This continued for about a quarter of an hour, when the stranger left the wheel, and bade the captain lay to. The yards were braced round, and, those forward counteracting those aft, the brig became motionless. Everything was now ready. An old jolly-boat, with a short mast, was lowered, an immense lantern was fastened to the top of the mast, and the thing let loose. At a distance it presented all the appearance of a vessel anchored outside the breakers, afraid to move in the dark. This simple plan—one often resorted to, but still often successful—carried out, the sails were again filled, the helm put down, and away went the good brig on her first course, free from all serious anxiety with regard to her pursuer.

II.—The Voyage Out.

Early next morning Eleanor came on deck, where she found the unknown quietly walking up and down, with all the calm of a man who felt perfectly safe. There was nothing in sight but blue sky and water. It was a lovely day. The wind was fair, the sails bellied to the breeze, the masts bent under the stiff pressure, and all seemed to promise a pleasant voyage out. Eleanor sat down and looked out upon the sea, but her thoughts were not there. She had scarcely slept all night for thinking of him who now walked by her, his arms folded, his brow knit, and his eyes fixed on the deck. She was strangely puzzled to know who he could be.

'You seem a good sailor, miss?' said he suddenly, speaking in a full deep voice close by her side, and with all the ease, elegance, and grace of a polished gentleman.

'Pretty good!' said Eleanor with a start of unfeigned surprise. 'This is my fourth long voyage.'

'You have been a traveller? I suppose you know the West Indies well?'

'I know nothing of them save what can be seen round my father's plantation in Jamaica.'

The stranger, seemingly encouraged by her words, sat down by her side, and began speaking of the various islands round the Mexican gulf, of the buccaneers and Spaniards, of the Spanish main, and of all the wonders and curiosities of a place then comparatively little known. His descriptions were clear and deeply interesting, and Eleanor was much surprised at the immense knowledge displayed by so young a man, who from his conversation had evidently spent the greater part of his life in England. He frankly owned to the lady that he was an officer of the famed Ironsides, that he had been a favourite with Cromwell, and consequently was proportionably detested by the reigning powers. He had only been in England, he said, three weeks on family business; but during this time he had been tracked like a wild beast of the woods, and was glad to breathe the free air of the sea once more. He entered into picturesque details of his adventures which singularly interested his listener, who, from education and religious feeling, felt much sympathy with the animated speaker.

Suddenly, however, he turned his talk back to the gulf, as Mr Bowen and Mr Postans came on deck. A rapid glance made Eleanor aware that his confidential avowals were for herself alone.

'Good-morning, father dear,' said Eleanor advancing to meet him; 'here am I up to my ears in histories of buccaneers and pirates. Pray Heaven we meet none of them!'

'Art so fearful of them, lady?' remarked the stranger.

'And surely no wonder. They are terrible men. I would not like to fall into the hands of Henry Morgan, or Montbar, or'——

'Him of the *Lone Star*,' continued the Ironside with a smile.

'Pray who is he?'

'No man knows,' answered the other. 'He is said to own the loveliest craft in all the gulf, to lie about in unknown places, coming down like a thundercloud on unsuspecting merchantmen in the very places where they count themselves safe. Many a good ship has been picked up by his swift brigantine just off a port.'

'God preserve us from the bloody-minded knave!' said Henry Postans. 'We have heard enough of him in Bristol. He wages a war of extermination against the Spaniards, though he never touches English merchantmen; but, strangely enough, he has captured many English men-of-war of twice his force by sheer cunning. A magnificent reward is offered for his apprehension.'

'I never heard that he was bloody-minded,' replied the Roundhead quietly; 'I always was told that he never took life except in fair fight; but there are many rumours afloat, and no man can say which are true and which are false.'

The conversation continued some time in the same tone, and by breakfast-time a considerable amount of intimacy had sprung up between the parties. There is no place like a ship for breaking down the barriers that society raises between man and man. Some days passed over, and the Commonwealth officer became unceasing in his attentions to Miss Bowen. He was ever at her side, and as his talents, education, conversational powers, and experience, were vastly superior to those of Henry Postans, Eleanor could not but pay him almost exclusive attention. At the end of a fortnight it was evident that the young men were declared rivals, and a coolness ensued. A great change was then visible in both men. The Roundhead became gay, light-hearted, merry; a smile was ever on his lip, and his eye beamed with inexpressible delight. The merchant became moody, sullen, and silent, and thus almost destroyed every chance of rivalry which might have existed.

Still Eleanor made no marked distinction between them, except as regards listening to the one more than to the other. This she could scarcely avoid, for there was no comparison between the colloquial powers of the rivals. The father seemed scarcely aware of what was going on. He had habituated himself to look on Henry Postans as his future son-in-law; and like many other parents in a similar position, he hardly thought it possible that another should attempt to interfere with such comfortable and satisfactory arrangements. About three weeks, however, after their departure from Bristol, two brief scenes occurred which brought matters to a climax.

After dinner one day, Eleanor and the stranger went on deck, the passengers scattered themselves about, while Mr Bowen and Henry Postans remained alone. The young man abruptly addressed his senior partner, and expressed his regret that his hopes of a nearer and dearer tie were at an end. The old man, much surprised, asked for an explanation. It was given. Postans explained that since the first interview between Eleanor and the mysterious unknown, an evident attachment had sprung up on both sides, which rendered his future assiduities out of place. He therefore begged to withdraw his pretensions, and hoped that this unfortunate change in his prospects would not alter their connection of affection and business. Mr Bowen would not believe the young man; but the nephew insisted, and the uncle at length yielded to the other's solemn assertions. He then explained that his property in houses, lands, and moneys in England was intended for his daughter, while his West Indian estates, negroes, and business, were all for his nephew. A will existed, he said, prepared, in case of his death before the expected marriage, which provided for everything, save a large sum in specie which he was taking out to Jamaica, where he wanted it for immediate use. The young man thanked his uncle warmly, and after again expressing his sorrow at the severe disappointment he had received, joined some planters in a game of cards, leaving the father wrapped in deep thought. He was a fond and affectionate parent, devotedly attached to his child, and it never crossed his mind to think of thwarting her affections. He determined, however, to have an explanation with the stranger next day, as, except that the captain showed him great deference, nothing was known about him.

Towards midnight Henry Postans retired hastily to his room with a dark and moody countenance.

On deck another scene had taken place.

'In three weeks more,' said the stranger as he and Eleanor leaned over the bulwarks, 'our pleasant journey will be over.'

It was a lovely night, though rather dark, except below upon the waters, where myriad phosphorescent lights danced around the ship as she cut lazily through the waves. All day it had been calm, the sun had shone on the mirror of the long billows so as to fatigue the sight, while a few vapoury clouds had floated across the sky. The wind was sinking and dying away, evidently before a change of weather. All was still, quiescent, and in repose. The two new friends felt the influence of the hour and of nature, and their hearts readily beat with similar emotions. Eleanor made no reply to the other's speech, and he was far from displeased at receiving no answer.

'Will you bear in your mind some remembrance of our meeting, lady?' said he after a long pause, during which he had in vain attempted to get a glimpse of her averted face.

'I shall never forget the kindness with which you have shortened my long journey by pleasant talk,' answered the lady in a low tone.

'And may I hope that we may meet again?' asked the Ironside soldier anxiously.

'My father will be glad to see you at his house if you make any stay in Jamaica, and can spare time to visit Old Oak Plantation.'

'Lady, why should I hesitate to speak frankly. I am a soldier and a

gentleman, and if I come to your father's house, it will be to beg your hand in marriage. I would not, however, put so delicate a question to your excellent parent without some word to encourage me. Our acquaintance has been short, lady, but on board ship days are weeks, and weeks months.'

Receiving no reply, the Ironside poured forth in his own eloquent and energetic manner all his feelings; and at last, after nearly two hours of unceasing persuasion, obtained an avowal that, provided he could win her father's consent, he might put faith in her generosity. He could not expect more, he had not dared hope so much. The joy of the soldier was grave and earnest; he thanked Eleanor with the serious and solemn tone of a man who unfeignedly felt that he had taken the most decisive step in life, and who fully appreciated the genuine value of such a prize as a woman's heart. The conversation of the happy couple became more confidential after this, and it was nearly midnight when the young lady kissed her father's forehead, and went to bed.

III.—A Tragedy.

Mr James Bowen slept in a large and handsome cabin, of which one side was occupied by the captain. It was a little apart from the sleeping-room of the other passengers, the nearest to it being those occupied by the stranger and Mr Henry Postans. The captain went on deck at midnight, and all the passengers went to their rooms, and dead silence soon prevailed below. The principal cabin, round which were the state-rooms of the party, was illumined by a dull lamp, which cast a fitful and imperfect light around as it swung from the roof. Nought was heard save the creaking of the ship's timbers, as the vessel pitched and rolled in the tossing sea under a light breeze. Now and then the heavy breathing of some sleeper might be heard for a moment, but then all relaxed into deep tranquillity and repose. An hour passed after all had retired to rest, and then the door of one of the state-rooms was opened softly, a head protruded, two eyes glared wildly around, then a dark form came forth, and a man might have been seen stealthily stepping along the floor in the direction of the captain's cabin.

He listened an instant at the foot of the ladder which led to the deck. All was still; and after a cautious glance around, laid his hand on the handle of the door, turned it, and entered. The door was then cautiously and quietly closed behind himself by the midnight intruder. A pause ensued, and the man might have been heard groping about the cabin; then a low voice said, 'Who is there?' After that no sound was heard; and at the expiration of ten minutes, the man again opened the door, and came out with a heavy bag in his hand. He breathed thickly, and almost tottered, but he was able to reach his room, and conceal himself in his bed. Presently, however, he struck a light, and for an hour was moving uneasily about his berth. Then again all was still and dark; and when the watch was changed at four in the morning dead silence prevailed.

At eight next morning the captain was summoned to breakfast. He had retired to rest at four, and slept soundly. Like a true sailor, however, he

was stirring in five minutes after he was called, and then proceeded to wake Mr Bowen. He laid his hand upon his arm and shook him, but at the same instant started back with horror and affright. A loud cry followed. It was heard by several, but Henry Postans and the unknown only came.

'Your uncle is dead!' said the skipper in a voice of dismay. 'He has died in his sleep.'

'My God!' cried the nephew, who was pale and trembling.

'He has been foully murdered, smothered with his pillow!' exclaimed the stranger in a grave and bitter tone after a rapid but keen and searching examination of the body, while his eyes were fixed meaningly on Henry Postans.

'And no wonder, when men whom nobody knows are allowed to mix with men of substance and reputation,' said Henry Postans in a voice of mingled menace and horror.

'Gentlemen, no quarrelling,' cried the half-bewildered captain. 'Mr Postans, if you allude to my friend, Colonel Sir Reginald Woolaston, I call upon you to retract your words. But, my God! is it true? Sir Reginald, look again.'

'Murdered!' repeated the stranger sternly—'murdered! "Vengeance is mine, saith the Lord," but justice is man's attribute in civilised climes. This horrible crime must be examined into.'

A writing desk of rather large dimensions, which had been broken open, now caught all eyes. Sir Reginald moved towards it, and took up a roll of paper which had fallen out. He raised it, opened it, and read. It was the will of the deceased, and largely in Henry Postan's favour. The soldier groaned, and turned pale. The nephew read over the other's shoulder.

'My good, my poor uncle!' exclaimed the young man.

'Captain,' said the soldier, drawing the skipper on one side, 'I have horrible suspicions. Did you notice anything peculiar between the uncle and nephew last night?'

'Ay!' answered the other with a look of amazed horror; 'they were closeted two hours here, and warm and passionate words passed between them. After that, the young man played cards in the most reckless manner, and went to bed without a word of greeting.'

'I remarked myself he said not good-night unto his cousin,' mused Sir Reginald. 'But Eleanor. God of mercy! what shall be said unto her? Where is she?'

'She is on deck,' replied the captain.

'I will go break the fatal news unto her,' continued the Ironside. 'Do you have the chamber of death put decent, and prepare for the last solemn rites.'

Sir Reginald went on deck, followed by Postans. Their solemn and chilled look froze the greeting smile on Eleanor's lips. She began to tremble. The officer approached her tenderly, and spoke in cautious words. Her father was indisposed—ill—very ill—ay, sick unto death—dead—murdered! All this took long to tell: between every word Sir Reginald had whole sentences of affectionate condolence; and when the fatal truth burst upon the unhappy girl, she had been so wilily prepared for it, that she heard the news with grief, passionate grief, but without any of those

sudden and fearful shocks which unhinge the functions of the mind, and drive reason from her stronghold, the brain. She was carried to bed, a draught administered by the ship doctor, and presently, after a wild burst of tears, she slept.

At the breakfast-table that morning men looked suspiciously and uneasily at each other; but eyes were especially fixed on the young baronet and the murdered man's nephew. Both were singularly agitated, and suspicion, that most fleet of human reflections, was busily at work. Some suspected one, some the other, and yet no man spoke his thoughts. All ate in silence. They heard the faint sounds of the carpenter's hammer preparing the coffin for the man who had the day before dined heartily and happily with them, and they shuddered. The void was doubly felt in the circumscribed world of a ship. The captain sat at the head of his table helping his guests mechanically. An acute observer might have noticed that after a while he became restless and uneasy, while his eye stealthily sought the countenance of the Ironside officer. Captain Montrose evidently suspected Sir Reginald. His love for Eleanor, the father's preference for Henry Postans, the independent position in which the young lady was now placed, were all arguments of irresistible force to his mind.

So absent was he, that the mulatto steward, Josh, a servant of Sir Reginald's, had all the labour of attending to the passengers' wants. Like his race in general, he performed his duty with alacrity and ability, and the breakfast passed off.

'Josh,' suddenly said Sir Reginald, rising, 'come here into the captain's cabin.'

'I, Massa Reginald, go near de dead man! Rader not.'

'Come!' continued the other sternly, and the mulatto obeyed, though not without much of that superstitious reluctance which belongs to his race. He took care, however, to turn his back on the body.

'Josh,' said the officer, 'I know who murdered this poor man, and so do you.'

'I, Massa Reginald!' cried the mulatto with a start of most unfeigned astonishment, while his eyes rolled uneasily in their sockets: 'I s'pose who say I did it nex'.'

'God forbid, Josh! But at all events I have strong evidence to make me believe that the nephew is the man. Now it must be found out before we leave the ship, and I charge you to use your eyes. Let not a look or motion of the young man escape you. If you see anything to weaken or strengthen my suspicions, let me know.'

'I will, massa—nebber fear.'

Sir Reginald said no more, but turning round, gazed mournfully and sadly on the corpse, and then leaving the cabin, passed through the ward-room, and went on deck.

That evening, one hour before sunset, with the usual solemn rites, the remains of poor Mr Bowen were committed to the deep, and Eleanor was an orphan indeed. A gloom hung over the whole ship. A murder at sea is a rare and terrible thing, and the whole population of that little world surrounded by waters were profoundly affected, while the more timid asked themselves with a shudder whose turn would come next?

IV.—The Lone Star.

The captain of the *Royal Charley* had made up his mind to sight land off Porto-Rico, and about a fortnight after the terrible tragedy which had saddened the whole voyage, was on the look-out for the little island of Sombrero. There was scarcely a breath of wind upon the waters, the breeze which had brought them along right merrily for some days was gradually dying away, the heavens looked sultry and scorching, the sun seemed ready to burn up the decks, the sails flapped lazily against the masts, the wind not having sufficient strength to fill them. The brig for hours scarcely obeyed the helm, and presently swung round, wholly unheedful of the efforts of the man at the wheel. There was a dead calm. Nothing is more unpleasant than a ship at sea in a calm. The waves are never still, and the vessel, uninfluenced by the sails, rolls and pitches in the most fearful manner. Now she rises on a wave, and plunges headlong down it; then she catches a mountain billow on her broadside, which sends her yards almost dipping in the waves, while the masts seem ready to be torn from their sockets with the violence of the shaking. A dead calm, with a heavy sea on, will do more injury to a vessel than even a storm.

Captain Montrose was aloft with Josh, whose powers of vision were remarkable; Sir Reginald stood beside the pale and mourning Eleanor; Henry Postans walked the deck with gloomy brow; while the other passengers stood or sat about, holding on to belaying-pins and ropes. Not a word was spoken. All were waiting for the long-promised cry of land, and even more impatiently still for a breath of wind to fill the sails and send them on their way. The Commonwealth officer, who, by the way, had dropped, if he had ever adopted, the peculiar phraseology of his party, spoke an occasional word in a whisper to Eleanor, who seldom answered except by a nod. She dwelt in silence on the dreadful fate which had befallen her father. Vague, wild, and strange suspicions floated through her brain. That her father had been murdered was quite evident. Then came the fatal question, asked in a terrified whisper, by whom? and it cannot be denied that the thoughts of Eleanor Bowen fell upon her two suitors. Her suspicions, however, took neither body nor shape; they floated dreamily through the mind, and, unable to fix anything real or substantial upon either, she said nothing. Had, however, a searching investigator have pried into her most secret thoughts, it would in all probability have been found that the bias of her mind was against her cousin.

'Sail oh!' suddenly exclaimed Josh in a loud voice; and then he added, 'Yes, sail oh! yah!'

'Where away?' asked the captain from the main-top-gallant sail yard, while Sir Reginald moved rapidly towards the after-mast main-shroud and looked out.

'Two points on de starboard bow, massa,' answered the mulatto, who was on the foretopsail-yard.

'She moving?'

'Comin' along like fun,' replied the black; 'she got long legs.'

The captain eagerly pointed his long glass in the direction designated by the mulatto. Sir Reginald quietly resumed his position alongside of Eleanor, and the passengers were all attention. A sail at sea after a long voyage is an event.

Scarcely had Captain Montrose caught sight of the craft first seen by the negro, than he came down from aloft, and calling Sir Reginald and his officers on one side, proceeded to hold council. He was certain, he said, that the vessel bearing down upon them was a pirate, a buccaneer. Her moving along with sweeps at a rapid rate showed that she was well manned, and he proceeded to ask advice as to what should be done. All hands were general in their first idea, and Captain Montrose, accordingly, had all sails closely furled, which might render them almost invisible except to good glasses. Sir Reginald said little. He leaned against the stern, where they stood, and listened.

'And what say you?' cried the skipper, suddenly addressing him, after all the others had spoken.

'Let the drum beat to quarters, and let passengers and crew prepare to fight like men.'

The tone of the Commonwealth soldier was electrifying, and his wishes were at once orders. The drum beat to quarters, the fearful intelligence ran through the ship that a pirate was close at hand, and all save the women eagerly prepared for defence. Eleanor expressed a wish, however, to remain on deck until the last moment, and on a sign from Sir Reginald, the skipper complied.

The bustle was prodigious for a while. The guns were uncovered and loaded, muskets, swords, pikes, and cutlasses were brought on deck, and all proceeded to arm themselves. Not a man showed any sign of flinching save Henry Postans, who shrank from the weapons offered him, and walked the deck in still moodier silence than usual.

On came the strange vessel, and before everything was quite ready, it was clearly visible from the deck. From that moment its advance was rapid towards the motionless brig. The splashing sweeps could soon be distinguished dipping with tremendous rapidity into the water, and then the shape and form of the supposed pirate became distinct. All stood watching its advance with intense anxiety. Every man was at his post, and ready for the fray; and yet when the schooner came within a few hundred yards, all stood in mute admiration. It was more like an elegant pleasure-boat than a pirate craft. Nothing could be lighter, more gracious, or more supple. It was a perfect miniature of the most splendid forms of naval architecture, and seemed as if built for a model, and not for use. It was almost aërian in its movements, as if it had been the work of a marine fairy. A picturesque eye would have thought that a dolphin had lent its quick and elegant form for the careen. Light as the sea-gulls that flitted around it, there was no breeze so gentle but what moved it. No matter how rough the sea, it cared not for it. When another vessel was labouring heavily in the trough of the sea, or was breaking amidships on the curling top of a wave, the cutter seemed to choose its own way, and to skate from wave to wave like a stone cast along the smooth surface of a lake. Its decks never were washed by the tempest, for it rose light as the very

ocean foam, and looked as if it could have been carried away by a stiff breeze on to the very land.

Its decks were crowded by armed men, and as it neared the brig, keeping out of the range of the *Royal Charley's* guns, it hoisted its colours, a blood-red flag with a huge white star in the middle. Captain Montrose answered by hanging out the banner of old England. A single gun from the *Lone Star* was all the reply, and then the sweeps were put in active motion, and the schooner prepared to cross the broadside of the brig, as if to board by the bow. In five minutes more the *Lone Star* was close under the guns of the larger vessel, but apparently too low down in the water to be hurt by them.

'Stand by your guns!' thundered Captain Montrose; 'take aim at the rascal's deck!'

'Not a shot, as ye love your lives!' cried Sir Reginald, suddenly leaping upon the bulwarks just as the schooner's head turned round towards the bows of the brig.

Every eye on board both vessels was now fixed on the mysterious stranger, who, holding by the main-rigging with his left hand, unfolded a small flag in his right, and waved it aloft. It was a milk-white banner with a single red star in the centre.

A frantic shout of joy instantly burst from the decks of the beautiful schooner, which began pulling towards the brig with even greater rapidity than before.

'What orders, sir?' presently shouted one from the deck of the *Lone Star*, touching his hat as he spoke, and bringing the *Lone Star* to a stand-still.

'Send Williams on board,' replied the stranger, who then resumed his position on the deck of the *Royal Charley*.

'Ay, ay, sir,' continued the man from the other deck, and next minute a shrill whistle was heard, a slight bustle became visible, and then a long, narrow, eight-oared cutter was launched and manned.

Every man on board the *Royal Charley* stood transfixed with astonishment. Their surprise was so great, that they no longer thought of defence. Captain Montrose stood speechless, with knit brow and clenched fists; Eleanor gazed wildly at the stranger; and Henry Postans advanced fiercely towards him. He trembled with passion.

'Bloody-minded pirate!' said the young man menacingly, 'we are in your power, but nevertheless do I accuse you of the murder of my uncle.'

'Every man in this vessel,' replied Sir Reginald calmly and coldly, 'is free, and when I have given orders to my men to keep in the same waters, I shall go my way with you; and if you will, you can accuse me before the governor of Jamaica. Freebooter I am, but not bloody-minded. I wage war on Spaniards only, except when a vessel of Charles Stuart comes in my way, and then I avoid her not. Accuse me not, young man,' he added, in a solemn and earnest tone; 'rather look into your own heart, and ask if that be stainless.'

Henry Postans stepped back, pale as death, his face actually blanched with horror.

'I—I accused!'—— He said no more, but hurried away to the opposite side of the ship, and resumed both his moody silence and his walk along the deck.

'Boat alongside, sir,' said the man at the gangway.

Sir Reginald immediately made signs for the officer in the cutter to come on deck alone—an order instantly obeyed. Williams was a weather-beaten tar of about fifty, in an elegant uniform, and with a look of honesty and respectability not often seen on board the vessels of the brethren of the coast. But he of the *Lone Star* was no common pirate. The sailor advanced towards his officer, and for five minutes they spoke together in whispers. Then the buccaneer turned away, and without addressing a word to any one on deck, went down the side, entered his boat, and pulled away.

A few minutes later a light breeze arose, scarcely sufficient, however, to urge the brig along. The schooner, on the contrary, spread its milk-white sails, thin, to all appearance, as sheeting, and away she sped over the waters like a graceful swan, in the direction of the land.

V.—Explanations.

Captain Montrose, as soon as all his sails were loosened, his helm once more governing the brig, advanced respectfully towards Sir Reginald, and cordially thanked him. He said that the fortunes of himself and family were wholly in the *Royal Charley* -that had she been captured, and sent to Turtle Island, he had been a ruined man. Under the circumstances, he owed, he said, an eternal debt of gratitude to the ex-Commonwealth officer.

The captain of the *Lone Star*, after receiving these thanks in public, drew the skipper and Eleanor on one side, despite the visible reluctance of the latter, and leaning against the bulwarks, briefly addressed them. He explained that, deprived of active employment by the fall of Richard Cromwell, and violently opposed to the existing government, he yet could not live without something to excite and move his mind. He and some of his party had, he said, conceived the notion of founding a small independent commonwealth on the Spanish main, and had been some time recruiting amongst their scattered forces for the purpose. In the meantime, he being wealthy, had bought a vessel, picked a crew, and spent two years in search of a fitting place to commence operations. He necessarily came in constant contact with Spanish ships, and never avoided a fight. He, however, never attacked English merchantmen, and the *Lone Star* had only come across their path by orders. They were directed to lie across the Mona passage, and board every vessel in search of himself, or news of him, if unfortunately he had been discovered in England.

'And have you still this scheme in your head?' said Captain Montrose, while Eleanor looked curiously at him.

'That wholly depends upon circumstances,' replied Sir Reginald. 'There is one thing would make me ask leave to live quietly in England, quit all my ambitious hopes, and become once more the English baronet, lord of the manor, and perhaps knight of the shire; but that rests not with myself.'

Eleanor turned away towards the sea to hide her extreme confusion, for despite her intense mental suffering, she could not resist the influence of the tyrant passion; and Captain Montrose, after a significant pressure of

the hand, left them together. Henry Postans stood still and gazed at them from a distance.

'Miss Bowen,' said the freebooter in a low, anxious tone, 'it is very soon, after so fatal an event, to speak of marriage or love; but before I leave this ship my fate must be decided. If you hearken to my prayer, and accept my hand, my fortune, and the name of Lady Woolaston, I shall return to England at once, and the interest of my friends will save me from anything but an order to reside in the country: if you refuse me, I join my merry rovers, and for the rest of my life become a skimmer of the seas, a buccaneer—if you will, a pirate.'

'Sir Reginald,' replied Eleanor bitterly, 'my father has been dead but twenty days, and would you have me speak of marriage?'

'Eleanor, dear Eleanor! you have to decide a question of life and death to me. I ask not to have you fix a period for our union; I ask only hope for the future.'

'Sir Reginald, is there not ringing in my ears the fearful accusation brought against you by my cousin?'

'And you do believe' ——

'Oh no!' cried the young lady with all the deep touching confidence of a woman's heart, and speaking in a rich, full voice, that left no ground for mistake. 'Oh no! But what would the world say of me accepting the addresses of one accused of murdering my father? Sir Reginald, ask me no more until this question is at rest, and the assassin is discovered. Then, believe me, Eleanor Bowen will not refuse the protection and home of a man she cannot help loving.'

'That word is enough,' said the freebooter, 'and on that promise shall I now live. It seems that just as I was returning to my wild life, after a brief absence, fortune has thrown in my way a gleam of sunshine, which I cannot but eagerly catch at. Be my wife, dearest Eleanor, and you will make me once more a useful member of society; and I shall forget in your company the broils and wars which have so long stained the fair face of England.'

'I have said much, Reginald,' replied Eleanor—'too much perhaps, under the circumstances; ask no more of me.'

The countenance of the Ironside lit up with a smile of joy and confidence. The word Reginald, without the sir, was to him sufficient. He asked—he wished for no more. They remained, however, in conversation on other topics for hours, and ceased only when summoned to the evening meal. They sat side by side; and the captain of the *Lone Star* interested both her and the whole company by his vivid narratives of adventure by sea and land. There was at first a certain degree of stiffness on the part of the passengers towards the renowned pirate of the Gulf; but his urbanity of manner, his eloquent and elegant language, soon chained their attention, which then could not be taken off. He so frankly explained his peculiar piratical operations, conducted with a view chiefly to the persecution of England's hereditary foes, the Spaniards, that his companions ended by approving instead of disapproving his proceedings.

Henry Postans alone held wholly aloof from him. In the mind and character of this young man a terrible and fearful change had been worked. All his quiet and good-natured gaiety was gone, and it was impossible for

the dullest observer not to be aware that he was devoured not only by deep grief, but by remorse of some kind. He had for days ceased all intercourse with his cousin, and never looked at Sir Reginald without a glance which was either a scowl or a look of terror. No one ever spoke to him, and as the end of the journey drew near, every man avoided him, for the same fearful suspicion pervaded all minds.

VI.—The Storm.

On the second morning after the encounter with the *Lone Star*, Sir Reginald came on deck at an early hour, aroused by the heavy labouring of the vessel. He found that Eleanor was there before him, equally awakened by unusual and novel sensations. The sky was dark and gloomy, the wind had risen during the night, and was blowing half a gale, while the dark colour of the clouds, and the heaving of the huge waves, threatened a perfect hurricane. Long strips of ragged vapour were every now and then detached from more solid masses, and sent scudding furiously along the sky. The brig lay under a close-reefed topsail; but being a good ship, answered her helm well, the more readily, however, when a storm staysail was set.

The captain and all the crew were diligently attending to their important duties. Two men stood at the wheel, and several were aloft on the look-out for land or breakers; but the wind had been so adverse ever since the calm, that they had run off the land instead of on to it, and this precaution was scarcely necessary. The scene was in reality sublime. The billows had risen in the night to the height of mountains, and presented a strange contrast to the calm surface of the water on the previous night. The heavens which, spangled with stars at eventide, had appeared a vault high aloft in immeasurable space, now seemed pressed down low, and hung like a funereal pall over all creation. The eye, accustomed to wander over a vast surface, and to gaze upon a boundless horizon, was now confined and cramped; for nowhere could any one see more than a hundred yards around. There was a dense vapour, which, mixed with drizzling rain, rendered the position of the *Royal Charley* infinitely more precarious than it otherwise would have been.

The captain nodded silently to his two passengers, who were wrapped up in garments suited to the occasion. But he attempted not to speak; he was anxiously looking around the horizon for a break in the clouds, which, however, promised no sign of the storm subsiding. Sir Reginald drew Eleanor into as sheltered a position as possible, and throwing a heavy cloak he had carried on his arm around her, seated her by his side. He had selected a pile of ropes between two guns to windward, whence a good view was obtained of the raging main.

'Is there much danger?' was the first and most natural question of Eleanor.

'There is always danger in a storm,' said Sir Reginald in reply. 'At the present moment the wind is not strong enough to present much peril for our brig, but even this wind, if it lasted long, would lash the sea into fearful waves. But things will not remain long thus; the storm must subside or increase.'

'And which appears most likely?' continued Eleanor, doubly confident in him both as a sailor and a lover.

'I can hardly say. The weather looks what the sailors call ugly; and were I in my own little craft, I should run under the lee of some small island or into some quiet cove, and remain there until the storm abated. But that can scarcely be done by the brig.'

'What think you, Sir Reginald?' suddenly exclaimed Captain Montrose advancing to his side. 'Are you not afraid we are in a serious predicament?'

'Hum!' replied the freebooter. 'I confess I like not the aspect of the sky; but worse weather has been seen than this. Your brig is a good solid craft, and will stand much rough work.'

'Ay, ay. But mark me, sir; we have only as yet felt the tail-end of an old storm. I can see a fresh one brewing, and fear the worst is yet to come. Are you not timid about staying on deck, Miss Bowen?'

'No, captain; I far prefer seeing what is passing to being cooped up in a cabin.'

'I expect,' remarked the commander of the *Lone Star*, who was examining the heavens with a keen and piercing eye, 'to see the wind shift to a directly opposite point of the compass. Have a care that you be not taken aback.'

'Sail on the weather-bow!' cried one of the look-outs.

All eyes were at once turned in the direction intimated, and a tall brigantine on the opposite tack was seen bearing rapidly down upon them. The captain flew to the helm, fearful that there might be a collision, and Sir Reginald examined the strange vessel with much curiosity. He almost immediately seemed to recognise it.

'Tis perhaps fortunate, Miss Bowen,' he remarked, 'that we have met that fellow in a storm. He is one of the most noted buccaneers of the Gulf, and it would fare ill with us to fall into his hands.'

'Would he not respect you?'

'Not he. He knows no distinction of nations or persons.'

At this moment the brigantine was abreast of them. A black flag became visible at the peak, while the deck was covered by men; but though the piratical nature of the craft was self-evident, the elements precluded all possibility of danger on that score. A man in the costume of an officer raised his hat politely to Captain Montrose, who returned the salute, very much pleased to confine his conference to such salutations, and then away sped the strange vessel, to be once more buried in the drizzling rain and fog.

For nearly the whole morning matters continued in the same way; the storm did not at all appear inclined to abate. A hasty meal was snatched by all on board, and then passengers and crew proceeded to watch the course of events. About three o'clock in the afternoon, however, a sudden lull took place, the ship rolled violently, and the wind ceased almost as suddenly as it had commenced. The result was again most painful; the brig was pitched and tossed about in the most disagreeable manner. The sails filled with the motion of the vessel one way, and flapped with a roar like that of distant thunder as it flew back in the opposite direction. The rigging shook, and every plank felt the vibration.

'Be quick,' said Sir Reginald, rising and making his way alongside of the captain. 'Let all hands have meat and drink, and then prepare to fight Lopez the Spanish renegade. He will be down on us almost before we are ready.'

'Was that Lopez who passed us?'

'The very man. Loosen the guns, and fire two, and then three. We shall want the *Lone Star;* if she be within hearing, that signal will bring her down.'

'Many thanks, Sir Reginald. Drums beat to quarters!—all hands splice the mainbrace!—send the gunners aft!'

These varied orders were given in a rapid tone, and as rapidly obeyed; while one watch took the proffered refreshments, the others once more prepared the warlike implements. A few minutes later, two guns were fired, followed at three minutes' interval by three.

The fog and rain gradually vanished with the violence of the storm; and when wafted along by a gentle breeze, the *Royal Charley* again sped upon her way. The pirate brigantine was, however, not more than three miles off, under a heavy press of canvas, making in the direction of its much-coveted prey.

VII.—The Combat.

Every sail which the *Royal Charley* could bear was crowded upon her at this eventful moment, and though there was little chance of avoiding a fight, yet Captain Montrose was not without some slight hope that night might come on before the combat became serious. Every preparation was made under the energetic guidance of Sir Reginald, whom the men obeyed with alacrity; for there was something in his tone and manner that showed him used to command. The skipper attended to the ship—the freebooter to the warlike preparations. The brigantine, however, sailed with such vast rapidity, that it soon became evident all idea of flight was vain, and at a preconcerted signal from the captain of the *Lone Star*, the brig swung round, and before the brigantine was aware of the audacious manœuvre of the merchantman, Lopez received its whole broadside amid his rigging. The flapping of sails, loud cries, and a terrible diminution in the brigantine's speed, confidently proved that the broadside had told. As quickly as possible the brig was again brought round, and a double volley showed that the two antagonists had fired at once. By the advice of Sir Reginald—who saw no prospect of safety except from desperate valour—the brig gave up some of its advantages (it had been a good deal to windward), and bore down upon the pirate. All was very soon wrapped in smoke; volley succeeded volley, each being guided by the vivid flashes from the other's guns. At almost every discharge the two vessels came nearer, until suddenly the brigantine received a shot which carried away its main boom. Captain Montrose took advantage of this.

'Crack on all sail, boys—put her before the wind—a stern chase is a long chase, and we'll get away from the reptile under the cover of night.'

'Quite right to try,' said the freebooter; 'but I fancy we must put more faith in the good fight than in our long legs. See, the fellow is so strong handed, his boom is nearly up again.'

In five minutes more the two vessels were again plying each other with those metallic arguments which until lately have been universally considered the best for settling disputes. The *Royal Charley* was remarkably well manned for a merchantman, and Sir Reginald was a host in himself. After a mutual exchange of broadsides during another half hour, the antagonists came near enough to use small arms; and the appearance of a cloud of men, clustering like bees about the bows of the brigantine, showed that they were preparing to board. Every man of the crew who could be spared from the guns, and all the passengers, hastened to put themselves in trim to repel the dangerous gang, whom they had now to deal with in close combat.

'Let every soul,' said Sir Reginald sternly, 'remember that he now fights for the life which God gave him, and which man strives to take away. Every living being will walk the plank if we be taken. There is no mercy in the mind of Lopez after a combat.'

Every being on board the *Royal Charley* shuddered at this fearful announcement, which, however, braced up the nerves of all to prepare for the terrible last struggle. On came the brigantine, receiving the last broadside of the *Royal Charley* in a way which did tremendous havoc both to men and spars, for the upper sails came down by the run, and hung over the side. But the pirate cared not. In another minute the two vessels met, their bows cracked against each other, grappling-irons were thrown out, and securely fixed, and then a cloud of dark and bearded ruffians of all nations plunged headlong on the deck of the devoted brig.

The number of the boarders was double that of those who had to defend their lives and properties against the attack of the reckless buccaneers. The defence, however, was earnest and valiant. All felt the cheering influence of a good and just cause, which is half the battle, and which gives to the attacked and the oppressed such universal force, and accounts for half the heroic deeds done by those who defend their fatherland against overwhelming and ambitious hosts. Sir Reginald was everywhere. He, by word and act, roused the bold crew and the passengers to stand fast; and though they soon gave way under the sheer weight of the assailing party, yet no man thought of surrendering. It would be painful to detail every minute feature of this terrible scene. It is sufficient to say, that in a quarter of an hour the deck was strewed with bodies, and all that remained of the *Royal Charley's* gallant defenders were Sir Reginald, Henry Postans, Josh, four passengers, and five sailors.

'Surrender, dogs!' cried the pirate Lopez, furious at a protracted struggle that was weakening his own force almost as much as that of the enemy; and aware, too, that another storm was brewing, a circumstance likely to prove fatal to ships in the state in which they had been placed by the combat.

But the answer he received was as startling as it was utterly unexpected. 'Down, renegade Spaniard—down on your bended knees, and ask your recreant life,' shouted Sir Reginald in a loud voice. 'On, my gallant rovers; on! The *Lone Star* for ever!'

'Down! down!' cried a hundred fresh and clear voices of men, leaping on the deck from all sides.

The pirates stood motionless. During the fever of the fight, even the

look-outs had left their posts, and joined the combatants. The man at the wheel had his eyes fixed on the tragic scene, and the elegant *Lone Star* had quietly crept up alongside without being noticed. The pirates had their pikes and cutlasses beat out of their hands before they could recover from their surprise, and the terrible struggle was over.

The remnant of the crew and passengers of the *Royal Charley* stood round Sir Reginald in a mute but grateful attitude.

'No thanks,' cried the captain of the *Lone Star;* 'I fought for myself and for her. I ask no thanks, for I deserve none. Williams, give us all necessary aid; secure Lopez and his gang, and then I give you his ship to pillage as you will.'

A loud shout was the answer; and then, after transferring the crew of the buccaneer to the hold of the *Lone Star*, the men proceeded to clear the decks of the dead, while the wounded were committed to the hands of the surgeon. Among the latter were Captain Montrose, several passengers, and some sailors. The dead were decently sewn in their hammocks, and launched into the deep under a salute of guns.

All the men of the *Lone Star*, after repairing some of the more obvious damage done to the brig, then proceeded to pillage the pirate brigantine, on board of which they found a rich booty. It had been cast loose from the brig, and lay-to at some distance. Suddenly Sir Reginald made a sign to Williams, who gave a shrill whistle. The crew obeyed the signal, and in a few minutes they were on their own deck, with everything worth removing. They had come away in time, for they presently saw the brigantine give a heavy roll, settle down in the water, its head pitch forward, and then in ten minutes more, with a noise like thunder, its decks burst their bonds, and then down went the vessel in the profound depths of the sea.

All stood still an instant gazing on the solemn sight, and then every thought was given to their own preservation. Sir Reginald ordered the carpenter to sound the pumps, and received from him the disagreeable intimation that there was eighteen inches of water in the hold. Still this was not an alarming state of affairs, and sail was diligently set, despite the gloomy look of the sky. A strong party of the crew of the *Lone Star* were transferred to the *Royal Charley*, which then proceeded on its way, keeping, however, as near as possible to its consort.

VIII.—The Leak.

It was quite clear that the lull which had taken place in the storm was to be of brief duration. As evening drew in, the wind rose again, the dark and gloomy sky once more appeared to weigh upon the tall masts of the brig, and everything presaged a terrible and horrible night. Sail was gradually taken in under the orders of Sir Reginald, who had constituted himself commander, now that Captain Montrose was lying on a bed of sickness. All hands, after snatching a brief instant of repose, came on deck, and prepared for the renewed battle with the elements. Two men, by way of precaution, were already placed at the wheel.

Not a star, nor a glimpse of the moon, which, however, had long since

risen, could be seen. The sun had gone down in a deep bank of clouds of an angry red, and not one of the signs that encourage the mariner could be distinguished. The rigging began to quiver and shake under the force of the breeze, and then the gale was upon them. The howling of the wind through the shrouds, backstays, and flying gear, was fearful. Nothing can convey an idea of its sound but the supposed screeching of unhappy spirits, while the shaking of the masts and yards added to the wild character of the uproar. Every plank, too, in the brig creaked and groaned, while a man must have bawled loud, indeed, to have made himself heard in all this tumult.

Eleanor, who could never remain below during a storm, wrapped up in cloaks, and with a tarpaulin around her besides, held on to a belaying-pin with one hand, and to a gun with the other. Sir Reginald stood beside her, gazing at the heavens, and occasionally giving some brief order, which the men obeyed with sombre alacrity.

'Try the well,' whispered he to the carpenter suddenly, speaking in a low and cautious tone, from certain knowledge of the fact, that no terror is greater for the sailor than the presence of a leak.

The carpenter went to the pumps and measured the depth of water.

'Two feet of water, sir,' he replied in an equally low tone, not unmingled with terror.

'Rig the pumps,' continued Sir Reginald; 'boys, divide yourselves into two gangs; there is a little water in the hold from the straining of the vessel, but half an hour's spell will set that to rights.'

The men did as they were ordered, and each gang pumped a quarter of an hour. The storm seemed, however, to increase in fury. The men at the wheel were bound to keep their attention awake to every movement of the brig, which at times seemed almost ungovernable. The darkness increased, and the vessel seemed absolutely sailing in a sea of ink. Suddenly the whole scene was illumined by a bright flash of lightning; every rope and spar became distinctly visible, while the *Lone Star* could be distinguished at some distance crossing the foaming crest of a wave. Presently rain, too, began to fall in torrents so heavy and unceasing, as even to beat down the raging waters, and slightly to diminish the rolling and pitching of the *Royal Charley*.

'Sound the well once more,' said Sir Reginald, again at the expiration of an hour, addressing the carpenter.

'Two feet six inches, sir,' presently replied the man in a low and despairing tone.

'Keep at them, boys,' said the captain of the *Lone Star* in a cheerful tone, though his heart sank within him. But he knew the vast importance of keeping up the men's spirits. 'Courage! the storm shows signs of abating, and the water is being got under.'

He then, without further speech, headed the fresh gang himself, after bidding the steward distribute a free ration of spirits to the men who had just left off pumping. But though all went cheerfully enough to work, both crew and passengers, they could not but see that Sir Reginald was simply speaking to encourage them, and keep up their spirits. They all felt the desolating influence of the fact, that the ship was filling with water. The storm may rage, the wind howl, the lightning flash, the

thunder roll, and yet the sailor will have confidence in the planks he treads on; but when once he feels that water is within the ship, under his very feet, his courage fails him, and despair takes fast hold upon his heart.

About midnight the storm seemed still further to increase. Huge waves rolling furiously behind the brig threatened every instant to break over the stern-poop of the vessel, one of the greatest dangers of a tempest of long duration on the deep. The vessel laboured heavily in the trough of the sea, then upon mountain waves, and seemed at every plunge about to rise no more. Not a word had been spoken for a long time. On all sides nothing could be seen but torrents of white foam, illumined every now and then by vivid flashes of sheet-lightning. The men were still at the pumps. Precisely at midnight Sir Reginald again commanded an inspection of the well, which now showed four feet of water in the hold. The men stood aloof, and refused to work.

'Bear a hand, my gallant boys,' cried Sir Reginald; 'it wants but four hours to daylight, and then we can leave the brig to its fate, and go on board the *Lone Star*. It is but to keep the ship afloat for a few hours. Steward, give the men cold meat, bread, and Hollands, and then all hands to the pumps. Overboard with the first man who flinches!'

The captain of the *Lone Star* spoke with intense energy. There was a double tone of persuasion and command in his words, which had its effect, and, despite the gloomy night, the dreadful beating of the storm, the rolling and pitching of the vessel, the men, after rapidly devouring the welcome refreshment offered, again separated into two gangs, and prepared for work.

'I think,' said the soldier commander, addressing the carpenter, 'if she were lightened of her masts, she would strain less, and make less water.'

'Very likely, sir.'

'Hand me an axe.'

The axe was given him.

'Starboard your helm, boys—keep her away a point. Look alive! Steady!—so!'

This order given, both he and the carpenter sprang to windward, and began hacking at the shrouds and stays, while others did the same forward. Very little time was needed to cut away the strained ropes, and their cracking was soon heard.

'Look out below!' thundered Sir Reginald, and the next minute the two masts broke off at the main and foretop, and hung to leeward. They were not, however, loose. Numerous bolts and ropes still held them on, and the brig lay down on one side in a very fearful manner. The four who had axes in their hands sprang up the rigging, clung firmly to the rattlings, and though almost blown off by the violence of the gale, succeeded in gaining the tops. A few well-directed blows soon sent the masts swimming alongside. They all then descended, and proceeded to sever the ropes which attached the spars to the ship to leeward.

The *Royal Charley* seemed visibly eased. She rolled still, but more lightly, and at two o'clock an examination of the well showed no increase of water in the hold. Still there was no abatement in the storm, and when in the morning the remnant on the wreck looked around them, and saw,

about a mile off, the *Lone Star* skimming the waters like a duck, all wished themselves on board the admirable little vessel. The difficulty was to get on board. It was clear that no boat could live in such a sea, but Sir Reginald, after making a signal to the schooner to come down upon them, began devising some means of escape. Presently a sweet smile floated on his face as a memory of childhood came upon him, and he bade the men look for a flexible but strong piece of wood for him. This was readily found, and converted into a bow. Arrows were rudely manufactured by the carpenter in a few minutes. Sir Reginald himself attached a leaden point to one, and a piece of rag by way of feathers. To the whole he attached a long piece of strong twine, to which in turn was fastened an immense and powerful cable.

In a very short time the *Lone Star* was, as directed by her commander, dashing close under the stern of the brig. Sir Reginald drew his bow, let fly, and the arrow, after twisting and twirling a little in the air, fell right on the deck of the *Lone Star*, and was seized by some of the men. A rapid movement of the schooner's helm then brought her nearer still, and before the raging sea could separate them, the cable was fast. A communication was at once established between the vessels, another smaller rope was passed, and the wounded, fastened in hammocks, were rapidly pulled over to the deck of the *Lone Star*. The passage, however, was long and tedious; and when a whole hour had passed, there still remained on the deck of the *Royal Charley* Sir Reginald, Eleanor, and Josh, who was at the wheel.

'Go,' said the captain to the mulatto; 'you can then pull me over, with the lady in my arms. Bid them pull gently.'

'Me go last,' replied the black sullenly.

Sir Reginald advanced menacingly towards Josh; he left the wheel; the brig, abandoned to itself, gave a fearful lurch, and all three were cast from their feet. When they regained their footing, they found that the shock had parted the cable—that the *Lone Star* was edging away to leeward, without any—the remotest chance of making back to them. They heard the frantic shouts of the men; they saw the sweeps put out; but all in vain. The elements had still too much power, and the devoted trio remained on board the *Royal Charley*, at the mercy of the gale.

IX.—Alone.

The position of our three adventurers was now apparently of the most painful, hopeless, and dreary character. They were alone, on board of a wreck, which was evidently fast filling with water. They were totally unable to manage it for any length of time. Sir Reginald and Josh, however, to gain a moment's reflection and rest, lashed the helm amidships, which kept the brig dead before the wind, and then held counsel. Eleanor sat in a state of perfect stupor on the deck. The *Lone Star* was already far away to leeward, still making desperate efforts to get to windward, a position it had hitherto nearly always kept; but the experienced eyes of the two men plainly told them that all its efforts were vain.

'What you tink we do, massa, now?' said Josh with a sullen and almost insolent grin.

'Put our trust in our courage and energy,' replied the ex-Commonwealth man. 'The storm has nearly exhausted its fury; the leak may not increase so rapidly as we fear; and if it does, why, we must get a boat into the water, and try our fortune there.'

'The ship him sink, certain,' continued the mulatto, who, however, spoke as if his thoughts were elsewhere.

'The ship will not certainly sink. See, the wind is already less, though the waves run mountains high. Go to the helm. We will each take it in half-hour spells.'

The mulatto obeyed, and Sir Reginald approached the young girl.

'Eleanor, this is a very terrible position for you; but have faith and hope. Perhaps we may be better off than we imagine. If the storm continues to abate, we shall escape with perfect ease. We are not two hundred miles from land, and the jolly-boat will take us that distance without any difficulty.'

'We shall never see land again,' replied Eleanor in a sombre tone; 'fate is against us.'

'Eleanor, never despair, never despond. It is the sure vanguard of failure, as confidence is the almost sure basis of success. We have still a good brig, perhaps too hastily abandoned, under our feet. To speak frankly, Miss Bowen, I have little dread of her sinking. I saw that the leak disheartened and discouraged the men, so I, in self-defence, proposed a transfer to the *Lone Star*. But I see no sign of the depth of water increasing.'

'Nay, give me not vain hope. I am now resigned to all. Reginald, my father is dead: those whom I love are under the ban of fearful suspicions; what, then, is life to me?'

'What life is to all created beings—the most glorious and brightest of things, Eleanor. Never despise life. It has far more honey than bitters in it, if we but seek the sweets. Eleanor, live in hope of happy days. My dearest girl, put faith in one who never lied. You will yet be my proud and happy wife—yet be revered and loved by all around you. The picture is before me, clear and distinct. I see it, I feel it, I know it!'

The convinced and confident tone of Reginald roused Eleanor. She held out her hand to him with a faint smile, while her eyes, beaming with hope and renewed life, were fixed upon his face with an expression which even at that moment made his heart leap. He added a few more words of consolation and comfort, and then again, like a general preparing for a battle, reviewed the elements. The *Lone Star* was still to be seen, this time with sail upon her, beating up towards the brig, but with very little chance of making it. The *Royal Charley* was dead to windward of her, the gale still very violent, the sea heavy; and Sir Reginald knew well that his faithful schooner would make more lee-way than she would gain ground on each tack. He gave up all hope on this side.

His first thought, then, was for provisions. The wheel was again securely lashed amidships, and both Josh and Sir Reginald proceeded to lay by all that was necessary for a cruise. Bread, meat, a little wine, a keg of water, with as many bottles as they could fill, and a few odds and ends, were put in a secure and convenient place. Alongside these they placed a short mast, a sail, a compass, and two pairs of oars, some boat-cloaks, a spare

sail, and a small mattress. The soldier did not forget some pistols, and powder and ball. He then bade Josh look to himself; but the mulatto contented himself with a small bundle, which he placed in a locker under a seat by the stern with every mark of care and caution.

Meanwhile the storm sensibly abated.

'Go below, Josh, and fetch the captain's spy-glass,' suddenly exclaimed the captain of the *Lone Star;* 'and look in his drawers: I think there are a few doubloons there, which you may have if you can find them.'

The eyes of the mulatto flashed like fire, and he went below; while Sir Reginald advanced towards the wheel. As he passed the locker in which the negro's bundle was placed, he put his hand in and lifted it. He smiled as he laid it down; but a strange smile, such as puzzled Eleanor, who was watching his every movement. Presently the negro returned on the deck with the spy-glass in his hand, and putting on a very long face.

'What's the matter?'

'Him captin ole fox. Take chery single dolla away wid him. Nebber leave a quarter.'

'Never mind. If we get safely on shore, you shall have your reward.'

'Tankee, massa.'

'Now, then, we must have out the jolly-boat. It is heavy; but we must rig pulleys, and hoist at the capstan. Everything for life.'

The wind had now much decreased, and was blowing scarcely half a gale; but the *Lone Star* was wholly out of sight.

Josh ascended to the maintop, Sir Reginald to the fore, and there they fixed two strong pulleys. Through these cords were passed, which were then securely attached to the jolly-boat, a new and tight little craft. Its firm and well-tied lashings were then cut away, and the two men went to the capstan. They first, however, made doubly sure of their best hope, by fastening a long painter to it. They then began to hoist. They had to do the work of six or eight men; but they were working for life; and at the end of twenty minutes' arduous labour—at times the capstan would not work—they had the boat hoisted a good way above the bulwarks. But it hung some distance over the deck. This, however, was soon obviated. Several spars were laid in a slanting direction from the huge and lofty long-boat to the bulwarks, and well tied. The jolly-boat was then slowly lowered, and Sir Reginald, rushing to the wheel, brought the brig up to the wind, and made her lie over. At this instant the cable flew from the hand of Josh, darted with extreme rapidity off the capstan, and sent the boat falling with a terrific splash into the water. Again securing the helm, the men both hastened with beating hearts to examine the state of affairs.

'All right, massa!' said Josh with a grin.

'All right!' replied Sir Reginald in a deeply thankful voice. 'Go down and loosen the blocks. Let her go astern, and I will hand you down the oars, masts, and plunder.'

The mulatto obeyed with alacrity, and the jolly-boat was soon well loaded with all that could be safely stowed into it. It was then determined to wait a while, for the storm was abating fast, and the sea was calming its fury. Eleanor and her lover took the first refreshing meal which they had partaken of for some time. Both were full of hope and

satisfaction, though Sir Reginald was unusually reserved and thoughtful. Their dinner concluded, Eleanor went to her cabin in search of some few little articles which might add to their comfort in the boat. When she returned on deck, the freebooter was standing with folded arms gazing at the sun, which was getting low. The wind had now fallen to a stiff breeze, and everything looked propitious for their proposed journey.

'Let us sound the wells,' said he after a while.

The negro half-cast approached the well, and assisted his officer to take the depth of the water.

'Six feet!' exclaimed Sir Reginald gravely. 'We have a fair warning; let us not despise it.'

'I am ready, dear Reginald.'

'Be ready in all things, then, Eleanor,' cried the other in a loud, ringing, and menacing voice; 'and now be firm and quick. Catch up yonder cord, and tie the scoundrel's hands.'

As he spoke, Sir Reginald raised a handspike, struck the mulatto across the head with it in a way to have killed a man with a thin skull, stretched him stunned upon the deck, and then began to tie his legs.

'Good God, Reginald, what mean you?'

'Ask me not, but tie the villain's hands. He meant to cut our throats in our sleep, and rob us—at all events I think so; and who is forewarned is fore-armed. I can explain no more just now.'

Before the mulatto had recovered his senses, he was so securely tied, that resistance was in vain. Sir Reginald then drew forth a pair of pistols and a dirk concealed under Josh's dress, and gave them to Eleanor.

'Keep these as evidence.'

Then the ex-Commonwealth soldier, whose strength was prodigious, raised the mulatto in his arms; and lifting him on to the bulwarks, lowered him by a cord into the boat. Eleanor followed; and then the captain of the *Lone Star*, after casting loose the painter, and taking Josh's parcel, descended also, and they were next minute pitching and tossing in an open boat upon the wide waste of waters.

X.—The Boat.

Sir Reginald had at once stepped his mast, and fixed a tall sprit-sail, admirably suited to the boat. He had, before leaving the brig (during the day), taken several observations, which gave him a pretty good idea of his position, which was far from being a pleasant one. The nearest land was the island of Porto-Rico, belonging to the Spaniards, his sworn enemies. But he was not perhaps personally known to any, and he trusted to the feelings of humanity which might be naturally expected to exist in the bosoms of all men towards persons in their position. But then he knew the vindictive character of the mulatto, who, though for years a faithful servant, would now, he was fully aware, readily risk his own life to gain revenge. He had but to speak a word, and the secret of the captain of the *Lone Star* was betrayed.

'It would have been wiser to have killed him,' said he, suddenly speaking aloud, without being aware of it.

'Who?' exclaimed Eleanor, who sat beside him in the stern-sheets, in a terrified tone.

'The black. He will yet, I fear, prove our ruin;' and the fingers of the impulsive soldier mechanically played with the butt-end of his nearest pistol, while his dark eye glanced menacingly towards the black.

'Nay, better risk anything than imbrue our hands in blood, Reginald,' said Eleanor, with a shudder, while at the same time she laid her hand firmly on his arm.

'True, love,' said the freebooter moodily; 'but we must rid ourselves of him before we seek hospitality in Porto-Rico.'

'Let us put our trust in Providence,' answered Eleanor in a low tone; 'it has been our friend until now, and will not desert us. Remember your own words.'

Sir Reginald did not reply; he was looking back at the brig, fast sinking into a mere black spot, while at the same time he slightly shifted the sail before a change in the wind.

'What is that skimming along the water afar off?' exclaimed Eleanor suddenly, pointing in the direction where she perceived something. 'It is a large bird, I suppose?'

'It is the *Lone Star!*' cried the captain joyously: 'the boys are again in search of us. They are making once more for the brig.'

He then gave the tiller for a moment into the hands of the young girl; and taking up the long glass before-mentioned, deliberately and carefully swept the dark horizon.

'It is the *Lone Star*, but twelve miles distant,' he continued. 'They are alongside the *Royal Charley*, and were it not nearly night, they would in all probability find us. It is impossible with this craft to steer except before the wind. If they see us not, we must continue our adventurous journey.'

He then described the movements of the schooner to Eleanor. It remained alongside the wreck a few minutes, and then hurried away, with all sail set, in a direction which left very little hope of its look-out noticing the devoted fugitives.

'The brig is sinking, I am sure, by their haste to depart,' observed Sir Reginald at length. 'Eleanor, the wind is fair and steady: you have slept; I have not for two nights, and my eyes close of themselves: do you keep her exactly as she is now, while I snatch a hasty nap. Wake me, dearest, if the breeze stiffen in the least, and wake me under any circumstances in a few hours. I would not lie down, but nature will assert its influence, and I must have a calm head and clear eye for to-morrow. God bless you!'

And the soldier lay down, and in a few minutes his heavy breathing showed that he slept soundly. Eleanor was now alone. The mulatto lay forward in the bows of the boat, also fast asleep. She gazed around, and could not but be charmed at the scene which presented itself. The sun was setting in a clear expanse of sky, illumining the waters, and tinging with a pinky-red hue the fleecy bank of clouds which hung above it. The wa[illegible] become comparatively smooth; and the wind, lately so biting and cold, was balmy and warm. There was a novel odour, too, about the air which seemed redolent of land; an odour of flowers, and

green trees, and of earth. On went the boat, up one side of a wave and down the other, seeming to make rapid and satisfactory progress. Presently the moon rose upon the now pellucid waters, changing the whole wide flood to a mirrored sheet of molten silver. White glanced the sails in its beams, themselves so bright, that Eleanor saw distinctly the play of her sleeping lover's features. She gazed curiously for a while at the face of the man who had so suddenly and wonderfully become as it were her fate. And then once more she looked around, and influenced by the hour and the scene, forgetting all save the seemingly prophetic words of Sir Reginald, Eleanor gradually allowed herself to give way to pleasant thoughts. She glanced at the future with some little of hope, and forgot the present so effectually, that she began to doze. First all around seemed a vague picture, then all was distinct again—the boat, the sky, the moon, the waters; and then she saw an old baronial hall, crowds of servants, Sir Reginald smiling by her side, with a vapoury outline of sundry little faces which she had never seen before, and yet which were quite familiar to her.

'Lie down, dear Eleanor,' suddenly said a voice near her, and she was again quite awake.

Sir Reginald held the tiller in his hand, and was pulling aft the sheet of the sail, which, during the brief doze she had taken, had got loose.

'Was I asleep?'

'Yes, Eleanor, and so was I, like a Dutch hog. The boat gave a lurch as your hand loosened its hold from the helm, which awoke me. I have slept more than six hours. Go you now to rest.'

Eleanor did as she was directed; Sir Reginald threw a heavy boat cloak over her, and she was soon in a deep slumber; but the same dream came not back to her, though she wooed it from curiosity, to see how it would end. They continued their journey all night without further accident, and towards morning found the wind so slight, as to send the boat along at a pace which, however pleasant and agreeable, as far as sensation was concerned, did not at all satisfy their impatience. The sun rose hot and bright in an unclouded sky, promising a lovely tropical day. The fugitives breakfasted with appetite, after giving some bread and water to the negro, who remained in sullen silence. He ate what was given him, and Sir Reginald fed him with his own hand, but he made no observations or remark.

'What has made you suspect Josh?' said Eleanor in a low tone when Sir Reginald returned to her side.

'I have more than suspicion. I know the fellow's eye well; he cannot deceive me: I have studied his character and countenance too much for that.'

'You know best,' replied Eleanor, who, like most women, had a kind of blind confidence in the words of the man she loved. 'But what a glorious day! It is quite cheering to see the sun peer forth after so long an absence.'

'It is a glorious day. But, Eleanor, I must warn you. The sun is rising far too hotly, and in too cloudless a sky, not to be followed by a calm. I fear we shall have to row under this terrific heat. If the wind continues, the broiling rays may be tempered by the breeze, but I like not the look of the heavens!'

'And yonder dark mass before us: is not that a cloud?'

'Ha! how sharp are your dear eyes! That is land, and land I know well. Let the breeze but last two hours, and we can take shelter on the Mona Island. There, too, is Porto-Rico rising before us.'

'Then our dangers are nearly over?'

'I know not; we have passed through so much, that we may have to pass through more before we reach the goal we seek. But eat on, dearest; nothing keeps up courage and hope like wholesome food.'

Eleanor did as she was directed, the soldier-sailor setting her a good example. Meanwhile the breeze continued, and even slightly freshened, which was hailed as a good sign, and the land became more distinct every quarter of an hour. Presently, instead of gazing on a dark mass like a cloud, they could clearly distinguish the trees and the green tropical vegetation of Porto-Rico—one of the loveliest sights which man ever gazed at from the sea—the hue of the land is so rich, the verdure so deep in its tints, and then it spreads itself upwards unchanged to the summit of the hilly coast from the very edge of the water. But the sun grew scorchingly hot, and Reginald was compelled to make a small awning for Eleanor, who began to suffer severely from the unusual heat and exposure. The rays of the great luminary fell almost perpendicularly on their heads; the air grew sultry and close, and the only relief to the weary eye was the sight of distant vegetation. About one hour after mid-day the boat, however, touched land, and Sir Reginald drew it under the cover of the trees, which on Mona Island grow down to the very edge of the water. A small cove, or rather creek, had been selected by him, which he well knew, and here it was determined to pass the hours during which the heat of the sun was too oppressive. Eleanor lay still in the boat under her awning, and carefully shaded by thick trees. Her lover, however, after well arming himself, began to make his way through the tangled and almost impenetrable wood. The journey was difficult. Up the hill sides the trees grew close together, while many lay rolling on his path, still further impeded by bushes and huge parasitical plants. Patience, however, and time brought him to the summit of the island.

He ascended a lofty tree, and looked around. The scene was lovely indeed, but he saw it not; for a few hundred feet off the opposite side of the small island to where they had landed, was the *Lone Star* beating to windward, as if in search of the boat. Sir Reginald had his own private flag with him. He kept it by him to the last, intending to destroy it if he fell into the power of the Spaniards; a contingency now, however, of very unlikely occurrence. He fastened it to a long bough, and waved it aloft. It was not noticed at first; he waved it again, raising it as high above the tree as possible, at the same time discharging his pistols. A flag flew to the peak of the *Lone Star*, a gun was fired, and a loud shout was heard, and he knew that they were seen. Again he waved his flag; but this time pointing to where lay the boat. The schooner eased off her sheets, and headed for the extreme eastern point of the island. Satisfied with this sign of intelligence, the delighted man descended from his post, and hurried down towards Eleanor. He found her sleeping soundly on the boat, the sweet sleep of innocence and fatigue. Without caring for the heat or sun, he pushed out, set his sail, and stood clear of the land. He had scarcely gone two hundred yards round a projecting point, when

he saw his faithful vessel come in sight, and ten minutes later they were alongside.

XI.—The End.

The crew of the *Lone Star*, and the relic of the devoted band that had sailed from Bristol in the *Royal Charley*, were all ranged along the deck, and were uproarious in their demonstrations of satisfaction. The free-booter and Eleanor were received with the delight one experiences at finding dear friends still living whom he had supposed to be dead. So great was the joy felt and manifested by all, save Henry Postans, who, however, was simply silent, that the negro's state was scarcely noticed. Presently, however, one of the passengers asked, 'What has Josh been doing?'

'Ah, I had forgotten,' said Sir Reginald, who with Eleanor was still on deck: 'Mr Postans, look here, sir. Know you of any property belonging to your uncle which lay in his cabin?'

'There was a large sum of money in gold, which I searched for when we returned to the vessel, and which I found not,' replied the young man in a hollow tone.

'Behold, then, the murderer of your father, Eleanor!' exclaimed Sir Reginald solemnly. 'God knows I never suspected the scoundrel. Mr Postans, I have a humble and most sincere apology to offer to you for my injurious suspicions. Villain!—wretch! speak, or I will have you hung at the yard-arm in five minutes!'

'What I say?' cried the negro, manifesting all the abject terror of a cowardly assassin.

'Who killed Mr Bowen?'

'I did, massa. What de debble he talk so loud to Massa Possans of all de money he had in him box?'

Passengers, crew, Mr Postans, Eleanor, all listened in silent amazement at what they heard.

'But, wretch! could you not have robbed without killing the old man?'

'He wake an' make noise. Josh no fool! Dead man nebber tell what him see! But, Massa Reginald, you no kill Josh? Him berry faithful servant, and tell the truth!'

'I shall not kill you; but you shall be tried at Kingston for murder.'

'Oh, massa, they hang me like one dog!'

'And you deserve it.'

The crew and passengers gazed with horror on the assassin as he was removed, heavily ironed, to a place in the hold. The doubt and suspicion which had hung over two innocent men was, however, removed, and all felt this to be an intense relief. Eleanor looked, despite her deep sorrow, with a kind smile on both. But she was startled at the expression of her cousin's countenance. He was about to speak.

'Sir Reginald, your apology to me is as nothing to what I have to make to you,' said Henry Postans in a voice of low and deep emotion, which prevented his words from reaching any ears save those of his cousin and the captain of the *Lone Star*. 'I knew of course all along my own innocence of that murder; but—and the confession will do me good—I did meditate to slay a man that night; and that man was yourself!'

'Henry!' said Eleanor.

'Hear me! Maddened by hate and jealousy, I retired to my bed that night not in my right senses, I believe. My uncle had not shown half the resentment I wished him to feel at your attention to Miss Bowen. I loved her; I had long expected to see her my wife; and then I saw a stranger step in between me and that happiness which I considered I was entitled to; I saw clearly that you were preferred to me, and my brain became maddened! I know not how the ideas came flooding in upon me; but they came, and at last exasperated, drunk with furious jealousy, a knife in my hand, I rose to rush wildly to your bed. But I heard a step in the cabin, and I could distinguish that it was near your door. This gave me an instant's reflection, and I lay down again. Imagine my horror when I the next morning—an assassin in thought—found that my uncle had been murdered, as I firmly believed, by the very man I had myself doomed. This will explain to you my subsequent gloom and despair.'

'But, Henry,' said Eleanor kindly, 'that was only a silly dream. It is over now. Think no more of it.'

'It is over, Eleanor, and so is another dream, silly also, but much more pleasant. But no matter. This generous man has saved all our lives, and nearly perished in the attempt. We can none of us reward him as he deserves; you must show gratitude for us all. If I am not much mistaken, there is only one reward which he would receive, and that is yourself.'

'We will talk of that another time,' said Eleanor.

'Yes,' added Sir Reginald, taking his hand, and pressing it warmly within his own.

'No!' replied Henry Postans firmly. 'I am her sole relative and guardian, and I will act. Publicly I have accused you, publicly I retract, and publicly I insist on joining your hands.'

'But Henry, dear Henry, hearken to me,' said Eleanor speaking hurriedly; 'reflect. My poor father is but just dead. I scarcely know Sir Reginald. This is too sudden an engagement—it seems wrong, unnatural at such a time.'

'My dear cousin,' continued the young man in an extremely solemn and anxious tone, 'will you, on your conscience, answer me one question? I implore it, I beg it. Remember, I pray you, what I have suffered, and be generous to me.'

'Whatever you ask me, Henry, I will answer,' said his lovely cousin much moved.

'Do you love Sir Reginald?' asked he gravely.

The freebooter stepped back not to hear the reply.

'Stay, Sir Reginald; come hither. You owe me both this kindness, to let me have my way. And now answer me, Eleanor.'

'I do,' said she in a low tone scarcely audible to the ears of Henry Postans, but clear as a bell to those of her lover. And the young girl fixed her eyes upon the deck, while her cheeks were suffused with crimson.

'Thank you, Eleanor,' whispered her cousin quietly. 'I wished to hear that word, and I have heard it. And now listen to me. I spoke last unto your kind and good father, and I can now speak in his name. Had he lived, he would have done what I am doing. The instant that I convinced

him you loved the stranger, his only care was that he should be worthy of you. This I can answer for. Captain Montrose, to whom I told all, convinced me of this.'

'Thank you,' said Sir Reginald.

'My friend, I but do my duty. I calumniated and aspersed your character. I find my mistake, and I own it.'

'True courage of noble minds.'

'But let us not forget what I ask of you. Eleanor, we are going to a strange place. You must have a protector. A rich heiress, you will be persecuted; and then, dear cousin, reflect that as long as you are free, I shall have hope left me. That would be cruel indeed. But once you are affianced, once you are married, I shall calmly make up my mind to what must be, and be once more your affectionate and attached cousin and friend. Will you refuse me this favour?'

Reginald and Eleanor refused no longer; and Henry Postans, with a grave and solemn air, placed the young lady's hand in that of the ex-freebooter; but, according to his promise, freebooter no more. Everybody was much moved at the sight, though unaware of the painful confession made by Henry Postans; and though the gallant crew of the *Lone Star* foresaw the consequence, they could not forbear a loud and gladsome shout at the sight of the happy countenance of their beloved captain. Josh was, as we have said, put in confinement in the hold; Eleanor had the captain's cabin given up to her, and then all sail was set, and the *Lone Star* once more was on its way. A good breeze, a lovely vessel, and fair winds, soon brought them to their port, which Sir Reginald entered without hesitation. Captain Montrose gave such an account of what they owed to him, that the governor of Jamaica welcomed him most heartily. In those days the brethren of the coast were very differently considered from what pirates are now. Lopez and his gang of regular sea-robbers were given up, with Josh, to the authorities, and ten days later, were all hung together, after a very summary trial. The *Lone Star* then departed. Williams took the command, resigned by his former captain; and the charming little schooner made for Turtle Island, and joined the renowned buccaneers, who were for some time yet to carry on warfare in those seas under the orders of Henry Morgan, Montbar, and others.

Sir Reginald and Lady Woolaston, a year later, returned to England, the former having obtained leave from the government to reside on his paternal estate; and Eleanor saw realised all, and more than all, that had been promised by her dream. She was indeed happy. She had a good and noble husband, who had never had any other serious fault than strong political bias and a morbid love of adventure. She in due time became a proud and happy mother, and was beloved to enthusiasm by all around her. Mr Postans settled in Bristol, and became one of its most powerful and wealthy merchants. Neither he, nor Sir Reginald, nor Eleanor, have ever forgotten the lessons of caution, temper, and patience which they learned on their cruise with the *Royal Charley* and the *Lone Star*.

Some years afterwards a lady and gentleman, attended by numerous servants, and accompanied by several children, got out of a rich carriage drawn by four horses at the door of a small inn, the only one in the little

fishing village they had stopped at. The gentleman was distinguished-looking, and the lady beautiful, and both seemed what was far better—supremely happy.

'Upon my word, Sir Reginald,' said the voice of a man inside the carriage, 'this is a funny place to look for the Dublin packet.'

'Do not be in a hurry, my worthy friend,' replied the other, speaking to a rubicund and rather portly gentleman, who now also got out of the carriage—'there is a reason for everything in this world.'

'Perhaps, then, sir,' said the lady with affected gravity, 'you will condescend to give one, and explain all this mystery?'

'And so you no longer like mystery?' observed the gentleman laughing.

'That's a good answer, Sir Reginald,' cried the gentleman with the rubicund countenance, 'and puts me in mind'——

'Of what, sir?' said the lady pouting.

'Of the shabby way in which Sir Reginald contrived to insure my remaining a bachelor. Never mind, he wont gain a farthing by it. All my property shall go to that wicked-eyed Henry there,' pointing to a boy of five years old.

'Thank you, my dear cousin. And now, Reginald, will you condescend to give me your reason?'

'Why, my dear Lady Woolaston,' said her husband smiling, 'as we were going to trust ourselves upon salt water again to visit my Irish estates, I thought I would have a yacht of my own instead of going in the Dublin packet. Look!'

Eleanor and Henry Postans followed the direction of his finger. In the small port lay a lovely schooner.

'The *Lone Star!*' cried our delighted Eleanor, recognising the vessel, the flag, and its captain, Williams, who had, at the invitation of his ex-commander, brought the vessel to England, and enrolled a picked crew of honest seamen.

'Upon my word,' cried Henry Postans, 'the man is still hankering after black-mail. But if we must go, better go in that beauty than in the Dublin packet.'

And the whole party were in a few minutes more again on the deck of the *Lone Star*; and the lovely vessel bounded on her voyage as if she felt the presence of her old commander.

RELIGION OF THE GREEKS.

THE description of the private and every-day life of the Greeks, which was entered on in a previous Paper, in order to be complete must embrace the system of religious worship prevalent among the Grecian communities. The religion of the Grecian world was characteristic and peculiar: a great part of it seems to have been unborrowed from any other people, and it acquired an undying interest, by furnishing the subjects of those works of art that remain to the admiration of modern ages.

As a people the Greeks were intensely religious. They lived under a strong habitual sense of the supernatural powers, and worshipped them with a various and costly ceremonial; large portions of time were consecrated to holy rites and duties; a religious turn was given to all the events and incidents of life; and there was the greatest jealousy and alarm at any neglect, profanation, or disbelief manifested towards the established divinities. The great progress in the correct and scientific appreciation of the world, made during the historic period of ancient Greece, modified to a very considerable extent the character of the primitive faith, especially among the educated classes; but there was never any disposition to renounce it entirely: in fact to have done so would have been a crime punishable by the civil magistrate.

The class of feelings and motive powers entering into what we denominate religious faith are various, and most of them will have to be alluded to in the course of the present exposition. But we lay it down at the outset as an indisputable fact, that the one constant feeling or attitude of mind lying at the root of religion, under every shape and form, is *submission*, taken in the largest sense of the word. The total sinking and renunciation of self, and the unqualified acquiescence of the mind in whatever is decreed by the supreme powers, is a very simple, but in our judgment a very accurate definition of the religious temper. Self-will, pride, egotism, or whatever other names we employ to designate the stream of action emanating from self, and terminating in self, express the essence of irreligious tendencies. The same turn of mind that disposes people to subordinate their own wills to others in ordinary life, enables them also to come under obligations to the powers above. A man may be unwilling for various reasons to recognise the Deity or deities worshipped by his fellows; but if the reluctance proceeds from what is called the state of the heart, its

is explained by the pride or self-will of the temper and disposition. Some men are formed by nature with intense and powerful wills, and their actions in consequence almost wholly proceed from their own individual wishes and resolutions. They will rarely do a thing simply and solely because it is the wish or opinion of some one else, even in working in concert with their fellow-men. They first adopt the resolutions of the others as their own resolutions, and while seeming to comply with a general opinion, they in fact comply with their own individual egotism. It is eminently distasteful to persons having an unusual degree of self-will to act otherwise than according to what they themselves think right and fit. A slavish and subordinate position is to them galling in the extreme, and the feeling of such persons is completely represented by the great impersonation of the class who thought it 'better to rule in hell than serve in heaven.' At the same time, it is to be understood that what is commonly meant by selfishness, or self-seeking, is not confined to the self-determining temperament.

The disposition opposite to pride and egotistic energy is a ready, full, and cordial submission to the desires and feelings of others. There is in some people by nature, and in many more by education and foreign influences, a feeling of peculiar delight in acting under, with, or for their fellow-beings; in having no will of their own, and in submerging every wish and desire in the will of some one else. This disposition may be so excessive as to render it painful to act from one's own unborrowed and unsupported resolutions; standing alone in opinion, or in action, feels cold, cheerless, and dreary. Either to follow their own solitary judgment, or to aim at their own solitary wellbeing, is a great trial to persons of the submissive temperament. Happiness is identified in their view with obeying and consulting other minds. Their selfishness will include objects out of self. The swallowing up of self in relatives, friends, country, or religion, is the highest luxury of existence—the great sweetener of life.

If self-determination be strongly developed in an individual, acts of submission and devotion will always be a great sacrifice; if, on the other hand, natural tenderness, sympathy, and sociability are predominant, a loving and joyful obedience is inevitable. But apart altogether from the consideration of the natural tendencies of individuals, it is an undoubted fact that the submissive temper, whatever its influences on the intellect, is the most productive of happiness, and of a delight that does not waste the frame, but rather refreshes and supports it; while the egotist, wrapped in self, his own adviser, and the sole end of his own being, has a hard and trying part to sustain, and one that is apt to wear out the powers of life. If in a high and commanding position, he can draw other wills into his own, and in this way he can connect himself with his fellows. To associate with submissive wills and followers is the greatest delight that society can afford him; but even this pleasure, great as it is, is inferior in sweetness, and less genial to the human frame, than the pleasure of total and entire submission to a person or a power that can command a willing and cordial acquiescence. It is a misfortune to any one never to have stood alone; but also a greater misfortune to have no experience of the unqualified devotion of heart and soul to some one wiser or worthier than self. Life is a mixture of both situations.

The ease and the delight experienced in the practice of a devoted

submission to other beings depend wholly on the influence that such beings are capable of exercising on the mind in the way of power, fascination, affection, or awe. To have to obey a creature destitute of natural dignity, and possessing no attractions nor qualities to command love or respect, is an intolerable hardship, which can be undergone only through compulsion or a sense of duty. If the natural submissiveness of temper is so great as to make obedience cheerful and pleasant in such repulsive circumstances, the endowment may be a blessing to the individual, but it is a degradation of the mind and character. Human nature would sink to the most grovelling sycophancy and subserviency if it did not possess sufficient self-regard to insist on the presence of commanding and attractive qualities in the objects of its worship and obedience. If we are to submit our own wills to others, we must have a satisfaction in doing so beyond the mere pleasure of submission, otherwise to many minds there would be no satisfaction at all; and this additional gratification arises from the influence of fascination or ascendancy exercised over our minds by the qualities belonging to the beings who call for our devotion. Hence there must be some natural relation of character between the ruler and the willing subject, between the Deity and the entranced worshipper. It behoves us, therefore, to ascertain, in the case of any one religious system, what are the qualities in the objects of worship that constrain, fascinate, and awe the minds and hearts of the people, for we may be sure that no religion is likely to be acceptable to the mass of a community without this condition.

Such being the nature of the religious emotion in general, we must now enter upon the special subject of our Paper, which we shall take up under the following heads:—1. Grecian Deification; 2. Actual Gods of Greece; 3. Ceremonial of Religious Worship; and 4. Religion of Common Life.

GRECIAN DEIFICATION.

We must assume, at the outset, that the gods whose worship prevailed in the Grecian world were either the creations of the Grecian mind, or adoptions from other sources, chosen and modified to suit the feelings, tastes, and apprehensions of the general community of worshippers. There is no evidence of any foreign influence at work to impose a creed or a class of deities at variance with the popular mind of Greece; it is therefore to be supposed that the attributes of the gods were in complete harmony with the ruling ideas of the people, and were such as to command their veneration and obedience.

If we ascend to the position of infant humanity, and reflect on the feelings excited by the contemplation of the world without and of the mind within, at a time when all nature was vague, mystic, and inexplicable, we shall have little difficulty in imagining the first beginnings of religious worship, and the earliest objects of veneration. The most general and predominating of the influences which seem to have drawn forth the religious regards of the Greeks were such as the following:—

1. The grand and imposing powers of nature, including all the objects that act on the human mind through the sense of might, terror, fascination, or other subduing emotions. The aspect of immense power, force, or

energy, always tends to put the beholders into a submissive mood, and thus impress upon them the main feature of religious regard. The will and power of the individual man is utterly abashed and confounded in presence of the stormy winds or the ocean billow; and the contemplative mind cannot but feel that a superior and overruling might dwells in the sun, the moon, and the firmament of stars. The germ of religious feeling is found in the first outgoings of the subdued spirit towards these mighty objects. Not only is there an irresistible inducement to bow the head and bend the proud will before the vastness of nature, but there is also a strong feeling of comfort and delight in the exercise. Moreover, the submissive mind readily passes to the conception of the benignity and kindness of the supernatural powers, while the stubborn spirit can count upon nothing but fiery hostility and indignation. Man, feeling himself weak, naked, ignorant, in the midst of a vast and terrible creation, is in general but too glad to acknowledge and feel his weakness and dependence, and to express this feeling in whatever way he is able.

The aspect of *might* and power is thus the foremost of all religious influences. The effect of this is enhanced by every species of danger, or by the additional influence of *terror*, which in the early stages of the world is almost inseparable from the contemplation of nature. Terror is the fruit of uncertainty. If we see a large agency at work, we feel ourselves subdued into deferential feeling by the sight; but if we understand clearly its whole character and the course of its proceeding—if we can tell whence it cometh, and whither it goeth—we feel no terror at the movement. But this clear knowledge of the course of the world was impossible in the early ages; no man could tell all the consequences bound up in an eclipse, or assign the causes of an epidemic, and the painful uncertainty as to the larger operations of the world kept up a perpetual susceptibility to fear or terror. But terror is pre-eminently a subduing influence; it can drive the mind of man to the most debilitating prostration; it produces an amount of submission approaching to abjectness, and the loss of all self-reliance and independence of spirit. Hence this, in addition to the natural influence of mere might and majesty, readily explains the submissiveness of tone so early assumed towards the great powers and aspects of the world. The sun, the moon, the stars, the winds, the seas, the mountains, the rivers, have all a naturally subduing influence upon minds susceptible to grandeur and power, and would inevitably induce feelings that could readily take the shape of religious reverence and awe.

There is, over and above the subduing effects of might and terror, an influence of irresistible *fascination* exerted by some objects over the human mind. Probably every one has had experience of some object or other, whether a person or an inanimate thing, which attracted the attention and regards with a power of complete entrancement and fascination; and this effect, although most commonly occurring towards persons, is not unfrequent towards natural objects. Dr Kitto, in his work on Deafness—a calamity which had befallen himself—informs us that there were two objects that always acted on his mind with a power of fascination so intense that it took an effort to prevent him from regarding them as divinities (this, but for his rational convictions, he would have done with the greatest zest and delight): these were the moon and a tree. With reference to these

two things, not only could he conceive the facility of their becoming objects of divine worship, but he had a difficulty in conceiving the possibility of resisting their fascination. The worship of the heavenly bodies and the consecration of groves and plantations in minds constituted like his would have been unavoidable.

Much of the fascination that now expends itself in poetic feeling and mere sensuous enjoyment would, in the early ages, form an inducement to that submission of heart and soul which led to the deification of nature. Wordsworth states, that to his mind everything in nature seemed *clothed with being*, or induced in him a train of thoughts and feelings corresponding to life, activity, and animation, which effects he endeavoured by his poetry to induce on other minds, that thereby the face of the world might become more rich, suggestive, and stirring. Prohibited from attributing actual vitality and personal functions alike to the grandest and the meanest of material things, the poet now-a-days must do so by conscious fiction; but in times when the actual properties of objects were little known, when a bewildering haze of mystery and terror overspread everything, and when the minds of men cherished rather than discouraged this mode of looking at creation, a far bolder flight was admissible, and the agreeable fiction might be set forth with all the air of truth and reality.

This leads to a more express consideration of the personifying influence so strong and predominating in the treatment of nature by the early Greeks. It was not enough that the powers and objects of the world should operate a submissive and religious frame of mind, through the feelings of might, terror, and fascination; to this was added an effort of the worshippers to clothe these powers in a garb derived from their own feelings and fancies. Until men's views are enlarged by the scientific study of nature, their only idea of force is something originating in a person or in an individual will; and whenever any great effort is witnessed, the observer is easily led to imagine some gigantic personality at the bottom of it. The distinction between personal and impersonal power cannot be made by the primitive mind; hence the only possible explanation of the movements and events of the universe is to suppose beings possessed of mind and purpose as the moving agents. But the Greeks, as noticed in our previous Paper, were intensely susceptible to the human presence, and loved to recognise personality in every shape and way. Their creative imagination working under this stimulus led them to multiply sentient and active beings in every corner of creation, and without any limits or restraint. To minds less sociable their world would seem to have a redundant population of spirits; there would be no quiet, no solitude, no place for the solitary temperament to enjoy calmness and repose. The heavens, the earth, the seas, mountains and streams, fields and groves, were all alive and instinct with mind; while additional beings were created to tenant the vacuities, and to keep up a busy stir of action and excitement wherever men could go or thought could wander.

Considering, therefore, the religious effect of the great objects of nature on the one hand, and the personifying representation of natural causes on the other, we are not surprised to find among the recognised deities of Greece, Helios, the *Sun*, Sêlêne, the *Moon*, Oceanus, the *Ocean*, Eolus, the *Wind*, Eos, the *Morning*, Nyx, *Night*, Uranos, the *Heaven*, or outspread

firmament, Gèa, the *Earth*. Mountains and rivers were consecrated objects full of an imaginary population, but were not expressly deified by the Greeks, as among many other nations. The Greeks also stopped short of the worship of animals, which prevailed in Egypt and elsewhere, and may be taken as an indication of very low tastes on the part of the worshippers. Some animals, by their aspect or their peculiar and inexplicable gifts, may have a fascinating effect upon human beings, and may inspire lively terror and awe; but to raise them to the rank of divine personages, and make them peers of the august objects of nature, is a proof of a defective sensibility to true grandeur.

One step further is required to convert personified natural powers into deities. The full conception of a divine being implies a special regard for the worshipper, which may be acted on by prayers, sacrifices, and general conduct. Besides being awed into reverential feeling by the moon or the sun riding in majesty in the sky, there must be a belief that these beings have a personal relation to mortal men, exercising towards them favourable or unfavourable feelings, requiring their homage and influencing their destinies. To pass to this conception is a very great stride—an adventurous leap of imagination. Some nations would appear to have stopped completely short of it, as in the case of the Chinese followers of Confucius. But it was a step most decidedly taken by the leaders of Grecian thought; for we find that the people had completely realised this close personal relation between themselves and their deities. They had no hesitation in praying to Eolus for a favourable wind, or to any other god for favours supposed to lie in his department. At the same time it would appear that the gods above enumerated, as exemplifying the personification of nature, were not the most usual objects of worship and personal hopes and fears. The actual remoteness and august isolation of the sun, moon, and firmament prevented them from being so closely involved in the feelings of every-day life as was the case with deities of a different origin.

2. The supposed *causes* of great natural phenomena come to be erected into an order of deities. The parts of creation where production and change are ever at work may be considered as acting on the mind somewhat differently from the great, imposing, and unchangeable objects of nature. Thus the powers of vegetation are something distinct from the vegetable world, and are explained by some great personation. The mere fruits of the earth have no imposing aspect, although of the deepest practical interest; but the influence that continually brings them forth is something mystic and sublime. A deity yielding corn, or a personification of mother earth, to explain to the mind the vast and wonderful phenomena of vegetation, to hear the prayers of the sower, and receive the gratitude of the reaper, may be considered as one of the most inevitable creations of polytheism; and we are therefore led to anticipate the belief in Dêmêtêr, the Great Mother, or Ceres, as a deity in the closest relation with the human kind. The step from the personification of the genius of Agriculture to the belief in the existence of strong personal regards between the tillers of the ground and the power that could fulfil or blast their hopes, is not great, and might be made by the rudest as well as the most imaginative minds. The wine-god may also be reckoned as the natural parallel of the corn-god, and as equally the object of devotion and worship.

3. The more prominent and striking of the mental manifestations are apt to be explained by personified causes. We have said already that volition, or free will, is the type of all force and energy to the early mind; this needs no explanation of itself, and it serves to explain all else. But such a feeling as love, being an effect not rising out of the free will of the individual, is not explained by this as its cause. This emotion seems to have a mystic and unaccountable origin, and the only supposition that can be made is, that some foreign will has the power to suggest it. Hence a deity of love has a place in all mythologies. So the wonderful powers of the human intellect may naturally seem to have an extra-human origin; and we may hence derive a personification of memory, of dreaming, and the like; and we see how, in fact, all human capacity came to be ascribed to the Muses.

4. The mysterious and affecting incidents of human life are likely occasions for introducing superior powers. The terrible fact of *death* cannot easily come to be looked upon as the mere natural issue of life: it is an infliction, a stroke, directed by some being whose purposes and thoughts are as gloomy as the fact itself. It is difficult for the mind to avoid personifying this agency; the experience of a violent death, or of the destruction of one human being by another, suggests the intervention of some unseen hand, even in the ordinary decay of nature; and the deity who holds the thread of life in his power has a more than usual influence in producing a submissive and reverential temper. Next to the mystery and dread majesty of death is the great fact of *birth*, which is sufficiently impressive to need a presiding deity.

5. There is a class of deities evidently created for the sake of relationship to the personifications of the actual objects and powers of nature. If, as in the case of the Greek mythology, the human peculiarities are fully extended to the gods, these will require habitations, society, relationships, genealogies, and adventures. Hence we have deities that have almost exclusively a relative function. Thus Hêrê, or Juno, owes her position to being the wife of Jupiter, or Zeus, and the mother of a divine offspring. Zeus himself, in addition to various special functions, is the king and head of the gods. The Greek mind had no feeling of elevated spirituality attached to deity; sexual love and procreation, according to the human type, were not thought incompatible with the dignity of a divine nature as such, although some of the goddesses had as their peculiar attributes the absence of sexual propensity.

As the gods came to be all arranged in a great genealogical tree, it happened that there were some of them who had scarcely any position besides the genealogical one. There does not appear to have been any regular worship paid to Chaos, Uranos, or Gèa, but all of them were involved in the ancestry of the present gods. So the Titans were a race of beings scarcely commanding any actual worship, although holding a conspicuous place in the history of divine transactions and affairs. Their origin seems referable partly to the suggestive influences of the great forces of nature in such phenomena as earthquakes, the upheavings of mountains, and the imaginary supports of heaven and earth, and partly to the desire of creating personages to bear a part, and serve as a sort of antithesis, in the doings and adventures of the other gods. The process

of deification never proceeded upon any one uniform idea: it was a mixture of every kind of suggestions — theories of nature and creation, human actions and relations, social necessities and poetic interest. Hence it is impossible to explain the total mythology by any single motive or intention on the part of its framers.

6. Heroic personages exalted to a comparison with the divine standard. The original type of divinity must ever be the personified powers of the world and of human life brought into close relation with mankind. Nothing less than beings of the highest conceivable order of greatness could originally command the worship and adoration of men, or so fill their minds with large and elevating contemplations as to provide the high spiritual satisfaction that is essential to religious worship. But the great primary objects of submissive veneration may enable an inferior class of beings to be brought up to the divine level. No human being, however august and commanding, would be capable of producing in the minds of other human beings the intense homage of the genuine religious sentiment; but when a superior class of powers has once evoked the feeling, there is no difficulty in transferring it to the inferior type.

The Greeks were highly susceptible to every kind of human excellence. Bodily strength, mechanical skill, passive endurance, beauty of form, and all the qualities of mind that can render their possessor useful or ornamental, were keenly felt and intensely admired. A superior human being receives homage in every society of men, but nowhere has the admiration of bodily and mental greatness been carried so far as in the Grecian world. The step from ordinary reverence to divine honours was therefore not so great as we should be apt to suppose. Hence it necessarily happened that individual men, exercising high qualities in a commanding position, came, on their decease, to be exaggerated into divinities, and worshipped with the rites appropriated to the supreme powers of creation. We have no means of asserting that the great gods and goddesses of Olympus—Zeus, Apollo, Poseidôn, Arês (Mars), Athênê, and the rest—were exaggerated human beings; but we can see this process of the heroic worship in operation in the inferior personages of the mythology. In every god whatsoever there was a coalescence of the might and grandeur of nature with human attributes; but in the individual cases there is often no means of deciding whether a natural power was personified or a human being elevated to a supremacy in creation. We may guess from the character of a deity which of the two origins was the most likely, according as the dominion over nature or the human attributes preponderate; but even this is rendered precarious by the tendency to make perpetual additions to the functions of a god once acknowledged.

7. We require to make special allusion to the feeling of ancestry, which played a high part in Grecian religion. The pride of birth, the mystic and intense respect towards departed ancestors, were peculiarly strong in the general mind. So powerful was this tendency to look back with reverence to antiquity and ancestry, that a species of ceremonial worship of the past would in all probability have been developed, although no other objects whatever had opened the fountains of religious veneration. Such a state of things seems realised in China, where solemn rites are observed towards progenitors by those classes of the community who recognise no

supernatural agencies of divine Providence. The fascination exercised by the *past* over the Greek mind is seen in the extraordinary mass of legendary matter afloat from the earliest ages, in the rise of historical composition, and in the antiquarian dilettantism of the later times. So intense was the feeling of pedigree, that every Grecian tribe and clan had their line of ancestry distinctly detailed, commencing with a divine head, and terminating in the living generation; and this divine head of the family or race was a constant and primary object of worship. Whether the deities possessing establishments and receiving worship in any one locality were many or few, the divine or heroic founder and progenitor of the population was sure of a conspicuous place and a large share of attention. Worship and ancestry were inseparably connected in Grecian ideas; and both these were allied with the possession of the soil, or the right of property in the land. The inhabitants of each place considered that the domiciliation of the gods along with them was their charter of occupation. The land had been originally allocated or acquired by some god or hero, from whom they themselves could trace a clear descent; and so long as the god was duly reverenced and worshipped, nothing would disturb their title or possession; but if they neglected the proper rites, or allowed any sacrilege to be committed, their footing as proprietors was endangered. It was also considered that the extinction, or accidental banishment, of a tribe or a family from their ancestorial soil was a real calamity, by depriving their divine ancestor of the worship of his own offspring on their common land.

We have thus two very powerful motives tending in the Greek mind to bring about a worship of actual *persons*, and not merely of *personifications* —namely, the feeling of ancestry, and the feeling of property in land. The supposed founder of a family, and the donor of the family possessions, drew forth an intensity of veneration and regard that would of itself have given birth to all the ceremonial of a complicated and costly worship. The deities thus arising became related by fictitious connections of birth and history with deities suggested by other motives; so that it may not be easy to point out instances of each different kind of origin. There can be no doubt, however, as to the existence and operation of all the various originating influences above enumerated.

8. The divinities receiving actual worship were but a very small fraction of the whole multitude of supernatural creations familiar to the Greek mind. The imagination once set to work in the region of the superhuman produced a great number of beings that entered more or less into the celestial organization, and contributed to the endless mass of fictions and romantic incident that made up the intellectual entertainment of the people. The satyrs, fauns, nymphs, and nereids, the gorgons and harpies, were all brought into relation with the supreme gods, either by birth or in the various transactions and adventures of divine personages. It is impossible to point out the men whose creative fancy first presented those figures to the popular mind; but we may readily understand that to people accustomed to run wild in their conceptions of nature, whose intellectual life was more of a delirium than of a cool experience and observation, who did not care for a fact of any kind unless it could be sung and danced to, who were, in fact, as far as pure knowledge went, romantic day-dreamers —these monstrosities were all perfectly natural and in good keeping.

ACTUAL GODS OF GREECE.

These remarks on the influences at work in suggesting the divine agencies recognised in the Grecian world, will pave the way for a brief enumeration of the principal deities entering into the established religion of the people. Although the supernatural personages familiar to the popular imagination through poets and bards were very numerous, the deities located in temples, and commanding the worship of entire populations, were very few; and of these few a still smaller number had a very great superiority in point of diffused recognition. In the immense mass of names presented by the mythology, we must, in order to avoid perplexity and confusion, call attention to a select few who enjoyed very nearly a monopoly of the national worship, and thus stand distinguished from those peculiar to separate localities, as well as from a host of others familiar to the imagination of the people through their literature, but not enthroned in their temples or worshipped at their festivals.

The ancients themselves made a distinction between the greater and the lesser gods. The number of the greater was twelve, evidently chosen as a round number, for it did not include all the first-class deities, the great name of Dionysus or Bacchus not being contained in the list. The twelve great gods and goddesses of Olympus were—Zeus, Poseidôn (Neptune), Apollo, Arês (Mars), Hephaestos (Vulcan), Hermês (Mercury); Hêrê (Juno), Athênê (Minerva), Artemis (Diana), Aphroditê (Venus), Hestia (Vesta), Dêmêtêr (Ceres). For every one of these a temple of worship existed in some one or more localities; they had all patronising positions towards some particular states, provinces, or tribes, or some special functions towards human society in general. A poor tribe or a single-minded people might have only one prominent deity in their ecclesiastical establishment. A rich and intellectual population like Athens would maintain a large plurality of gods in full state and grandeur, and would in consequence console themselves with the idea of a wide and powerful protection.

Zeus (Jupiter).—This deity has the noble function of king or president of the gods in the organized society, and was the literal father of a numerous progeny. His countless amours and intrigues, which shocked the feelings of later times, were necessary, in order to bring into relation with him the vast number of inferior personages who thus derived lustre from the highest celestial dignitary. He was also related by fraternity to several of the first-rank deities, and had himself an illustrious descent; but from the nature of his ancestors, who were great natural personifications, by no means rooted in the popular faith, we infer that these were subsequent creations got up to supply him with sufficiently august progenitors. His father was Kronos, and by him he was directly related to the primitive deities Chaos, Gèa, and Uranos, who are evidently cosmogonical personifications belonging to a later age than their kingly descendant.

If we separate Zeus from his genealogical and social relations with the other divinities, and examine his personal attributes, to which he probably owed his creation, we find them to be very august and momentous. In fact he is the grand protector of human society against lawlessness and wrong; he is the great sanctioner of oaths, and the punisher of per-

jurers; he enforced the ties of hospitality; guarded the family hoard and the realised crop of the year; and granted expiation to the repentant criminal. But at a certain stage of society these would constitute the great functions of a protective power. When human law was weak, the bond of hospitality was one of the grand securities against mutual violence; a solemn oath was the most powerful restraint that could be imposed upon the members of a compact; and the preservation of one's lawful gains was a matter of special difficulty, for which neither individual self defence nor human authority was always adequate. These, together with the exalted function of pardoning the repentant wrong-doer, made up the sum-total of the social necessities of a people: they showed where human power was deficient, and where superhuman interference was called for. The inventors of Jove's supremacy were led to invoke a superior might precisely at those points where human might was at fault. Believing that there must be redress somewhere—a faith that has always clung to human nature—they sought it in the Thunderer of the skies, whom they invested with the attributes demanded by their condition. Thus arose the great redresser of wrongs, the remedial god, the fountain of justice, the friend of the oppressed. With an eye to the dread powers of nature on the one hand, and the stern necessities of human society on the other, a deity was fashioned omnipotent in his functions, as became the wielder of nature's might, and beneficent in his operations in the painful and distracted world of mortals. It is not unlikely that the people whose intellect and necessities gave birth to this lofty creation were at the time satisfied with him as their one god, supreme and all-sufficient for their protection and the religious regards. We are not to suppose that a plurality of gods spontaneously arose at the same epoch from one national mind. Polytheism must be the fruit partly of a prolonged study of nature and life under various aspects, and partly of the different points of view of distinct minds working each in its own independent sphere.

Apollo.—'The worship of Apollo,' says Mr Grote, 'is among the most ancient, capital, and strongly-marked facts of the Grecian world, and widely diffused over every branch of the race. It is older than the Iliad or Odyssey; in the latter of which both Pytho and Dêlos are noted, though Dêlos is not named in the former. But the ancient Apollo is different in more respects than one from the Apollo of later times. He is in an especial manner the god of the Trojans—unfriendly to the Greeks, and especially to Achilles; he has, moreover, only two primary attributes—his bow, and his prophetic powers; without any distinct connection either with the harp, or with medicine, or with the sun, all which in later times he came to comprehend. He is not only, as Apollo Karneius, the chief god of the Doric race, but also (under the surname of Patrôus) the great protecting divinity of the Gentile tie among the Ionians; he is, moreover, the guide and stimulus to Greek colonisation, scarcely any colony being ever sent out without encouragement and direction from the oracle at Delphi: Apollo Archêgetês is one of his great surnames. His temple lends sanctity to the meetings of the Amphiktyonic assembly, and he is always in filial subordination and harmony with his father Zeus: Delphi and Olympia are never found in conflict. . . Besides the Delphian Temple, Apollo had numerous shrines throughout Greece, and oracles at Abæ in Phôkis, on Mount

Ptôon, at Tegyra in Bœotia, where he was said to have been born, at Branchidæ near Milêtus, at Klarus in Asia Minor, and at Patara in Lykia.'

From the two attributes specified by Mr Grote as attaching to the ancient and primitive Apollo—the bow, and the gift of prophetical prediction and warning, which last he exercised through his oracles—we can trace in a very decided way the deification of great, imposing, and valuable human attributes considered in reference to the time. The bow was the soldierly weapon—especially a soldier who strikes from a distance, and is himself often unseen—and the prince of bowmen was the first of heroes and protectors. The oracular gift was the most remarkable form of spiritual guidance or practical wisdom; and the two attributes together make a being of conjoined physical and mental ascendancy. We must attribute the origination of Apollo to a totally different soil from the creation of Zeus, perhaps to a still more primitive condition of things. Like every other god springing out of the popular imagination, he exhibits the qualities most necessary to the people, and most suited to their tastes—a combination of the useful and the imposing. The progress of the national mind gives him other attributes supposed to be naturally allied to his original character, and calculated to swell out to larger dimensions his physical and intellectual ascendancy. He was in all probability for a long time the solé divinity of a number of Grecian communities, who adapted all their ceremonial to his character, and considered themselves adequately protected and guided by his exclusive presence. He had a set form of worship, which was marked by a quiet, stately solemnity of manner and style. The education of the youthful Spartans included a careful discipline in the song and dance belonging to the divine service of their Apollo. His most renowned temples were those at Delphi and Delos. At Delphi, his oracle was consulted from all parts of Greece, and from foreign countries. The barren rock of the island of Delos in the Ægean Sea was the favoured seat of the god, where 'the Ionians, with their wives and children, and all their "bravery," congregated periodically from their different cities to glorify him. Dance and song and athletic contests adorned the solemnity; and the countless ships, wealth, and grace of the multitudinous Ionians had the air of an assembly of the gods. The Delian maidens, servants of Apollo, sang hymns to the glory of the god, as well as of Artemis and Lêtô (who were mixed up with him in the local legends), intermingled with adventures of foregone men and women, to the delight of the listening crowd. The blind itinerant bard of Chios (composer of the Homeric hymn, and confounded in antiquity with the author of the "Iliad") had found honour and acceptance at this festival, and commends himself in a touching farewell strain to the remembrance and sympathy of the Delian maidens.'

The great Pythian games or festival, one of the national gatherings of all Greece, were associated with the worship of Apollo; and the earliest subject of competition was the singing of a hymn in honour of the god. Prizes at the festivals formed all along one of the great stimulants to poetic excellence; a great number of the highest compositions of antiquity were produced under the spur of public competitions for honours and rewards. The whole of the dramatic poetry arose in this way, in connection with the worship of Dionysus, and a great proportion of the lyrical poetry had the same origin.

Poseidôn (Neptune).—The characteristic attribute of this god, his rule over the sea, attests his origin from a personification of natural power connecting itself with human wellbeing through the medium of the watery element, on which a seafaring people had so large a stake. He is the sailors' god; and in a country like Greece, where there was much traffic by sea, he would necessarily acquire great importance and a wide diffusion. The island of Kalauria is his principal seat: he was also solemnly worshipped at the isthmus of Corinth, where there was an immense traffic by sea; and in various other places. A legendary contest took place between him and Athênê for the patronship of Athens, but in this he was worsted. The legendary stories, abounding respecting all the deities, set forth many adventures of Poseidôn, including a compulsory servitude by command of Zeus under Laomedon, king of Troy, which was a means of bringing him into action in the great Trojan war, where deities bore an essential part in the protracted struggle.

Hephaestos (Vulcan), the God of Fire, Metallurgy, and the Mechanical Arts.—This, like Apollo, is an obvious personification or exaltation of important human capabilities. Hephaestos was not a deity of the first rank himself, but had his functions brought into play in the ingoings of the other gods. The popular mind took great delight in listening to the stories of his skill, and it pleased their fancy at the same time to conceive of him as lame and deformed. In conjunction with Prometheus and Athênê he was worshipped at the village of Kolônus near Athens, but the island of Lemnos was his favourite residence.

Hermês (Mercury).—'The knavish, smooth-tongued, keen, and acquisitive Hermês,' the messenger of the gods and the inventor of the lyre, acquired a great hold on the Grecian mind, not as an object of temple worship and protective might, so much as an interesting romantic personage. In the tales and romances of all ages a cunning, skilful, unscrupulous character, constantly outwitting everybody else by ingenuity and deep-laid schemes, is always popular; and the relish of the Greeks for such a character was extreme. Hence the great abundance of stories where Hermês was brought on the stage, and the large place that he bore in the recollections of the community. We must therefore look upon him as an interesting and romantic fiction, and as occupying a post that could not well be spared in the active ongoings and transactions of the divine society.

Arês (Mars), the War-God.—The worship of Arês or Mars was far more extensive in the Roman world than in Greece. The celebrated Areopagus at Athens was his most conspicuous seat in the Grecian territory. He was made a son of Jupiter by his wife Hêrê, and had a position in divine story.

Athênê (Minerva).—This goddess is everlastingly identified with the great capital of Greece, and with the Parthenon, whose ruins still adorn the Athenian acropolis. The establishment of her worship as predominant at Athens goes far back beyond the dawn of history or credible tradition, and is represented only by the legends of poetical fancy, whose authors found the thing as a fact, and contrived an explanation of it from their own brains. The type of character deified in Athênê is very remarkable, and presents a combination more poetical or romantic than practically useful in the affairs of the world. She is the type of composed, majestic,

and unrelenting force, clothed in military array; and combines this powerful ascendancy with a temperament impassive to sensual love. A manly woman was a character that had great charms for Greek taste and feeling: the legends of the Amazons, so extensively disseminated, and actually believed in, were addressed to the same kind of taste. There never was presented in actual history any such combination as was fabled in the Amazons, and deified in Pallas Athênê: in their case the wish was the father of the thought. The fiction seemed to have irresistible fascination with the Greeks, for down to a very late period the belief in the existence of the Amazons, and of their having borne a place in early Grecian transactions continued unshaken and unaccountable. Athênê must be looked upon as a pre-eminently theatrical personage; it pleased the people to imagine and believe in the divine exaltation of such attributes, and they worshipped and trusted her accordingly. In what circumstances the creation arose, no one can tell; we must be content with noting its widespread and warm reception by the natural likings of the people.

Aphroditê (Venus), the Goddess of Love.—The inspiring agency or cause of the emotion of sexual love was sure to receive divine exaltation in an age when the human passions were referred to the suggestions of extraneous powers. An influence so universal, powerful, and fascinating, and so apt to produce entire unqualified devotion of self, and to render submission the highest happiness of the individual, could hardly fail to be looked upon as commanding and divine, and not unworthy of comparison with the deified powers of creation. The goddess Aphroditê, in the conception of the ancient Homeric hymn sung at her festivals, is described as 'herself cold and unimpressible, but ever active and irresistible in inspiring amorous feelings to gods, men, and animals.' She was worshipped in the island of Cyprus with special devotion; but her temple worship was only a small part of her connection with the popular mind of Greece. In legend and literature she 'was one of the most important of all the goddesses of the mythical world; for the number of interesting, pathetic, and tragical adventures deducible from misplaced or unhappy passion was of course very great, and in most of these cases the intervention of Aphroditê was usually prefixed, with some legend to explain why she manifested herself.'

Artemis (Diana), the Huntress.—This goddess seems to have been especially worshipped in Arcadia, and mountain solitudes were considered her favourite resort. In these she was worshipped often with dances approaching to Bacchanalian frenzy. Her type is a manly virgin, devoted to the chase, and she has a certain degree of parallelism with the armed Athênê. Her worship at Ephesus is world-renowned, and from this place she passed to the two other states of Phokæa and Miletus; but in all these localities her primitive character of a virgin huntress was mixed up with Asiatic ideas assimilating her with the Lydian Dêmêtêr, whom we shall have to notice presently. Like other deities, she had no doubt a local origin, and had her character determined by the circumstances of her creators, who would probably be either given to hunting as a mode of livelihood, or specially charmed with it as a pursuit. It does not always happen that people deify something in their actual condition; on the contrary, they are more apt to be fascinated with some object beyond their grasp, and known only in imagination. Hence we cannot be certain whether a received object of

divine worship had been originally an echo of daily life and familiar experience, or merely the longings of a day-dream.

Hestia (Vesta), the Goddess of the Family Hearth.—This goddess, 'chaste, still, and home-keeping,' represents to us the ideal of the angel and protectress of the fireside. All the associations and emotions that were wound up in the home circle went to body forth a divine personage, who might receive the homage and acknowledgments of the members of families. Whatever the Greeks might be in real life, they were extremely elevated in many of their ideal conceptions, and in the pictures and embodiments that they have transmitted to posterity; and the creation of Hestia may be taken as an evidence of the existence of sentiment in reference to the family circle, at least in their poetry and romance.

Dêmêtêr (Ceres), the Great Mother: the Goddess of the Corn-field.—This deity was the offspring of men's feelings of awe and reverence towards the author of their daily bread. She was worshipped, with the usual festive rites, by the primitive rural populations, on the two occasions of seed-time and harvest—the harvest-home especially being always a time of rejoicing and hearty cheer.

But the Grecian worship of Dêmêtêr, and also of Dionysus or Bacchus, underwent a very great and important change about the seventh and sixth centuries before Christ, in consequence of the introduction of foreign ideas and practices from Thrace, from Phrygia and Lydia in Asia Minor, and from Egypt, which was first fully opened up to the Greeks about 660 B.C. The remarkable feature of the innovation lay in the forms of divine service, or in the peculiar style of action and music employed in the demonstrative part of the worship. The character of the new rites was noisy, violent, uproarious, and exciting, to such a pitch as to produce a temporary frenzy in the minds of the congregation. Instead of the moderate elation and thrill of a sedate dance and sober tune on the harp or the flute, the Oriental style lashed up the spirits into ecstasy and delirium, like a kind of intoxication, but far more intense than the highest elation of wine. The taste for this extraordinary outburst of nervous excitement and mad delight was originally Asiatic, and seemed congenial to the Asiatic temperament; but it took effect in Greece, and became more or less common, attaching itself more especially to the deities of the corn-field and vineyard. Violence of motion in the dance, the clangour of cymbals, the jingle of the tambourine, and the shrill emphasis of the pipe, were the stimulants for bringing on the desired ecstasy, indulgence in wine being generally superadded. Religious frenzy and mechanical intoxication have always been familiar in the East, but in modern Europe they are very little known, and to some ancient nations (the Scythians, for example) they were even abhorrent: something of the kind seems to accompany the worship of the extreme fanatical sects of America. Probably the enjoyment of the devotees of such a religious ceremonial is intense and extraordinary, in comparison of the most gushing excitements and wildest revelry of ordinary life. Weeks of languor and ennui will have to be endured as the price of one mad night of joy; but there have always been a class that preferred such a mixture of extremes to the even flow of a dull and comparatively joyless existence.

The ecstatic worship of the Great Mother was indigenous in Phrygia and Lydia, and the Greeks, in borrowing it for adoption in the worship of their

own Dêmêtêr, acquired a considerable accession to their music, they having very little musical genius of their own. The occasions of the practice of foreign rites, and the appeal to foreign deities, are said to have been times of national terror and panic, when the routine worship of the established divinities was too tame for the excited state of the public mind. The priests or hierophants of new and strange rites were had recourse to as an extraordinary step, and would no doubt hold out hopes of benefit from their peculiar religious systems. Thus the introduction of a system very little in keeping with the native mind and spontaneous feelings of the Grecian population gradually took place, and the establishments of the deities, worshipped on the foreign model with maddening rites, acquired a footing of equal respect and attention with the immemorial temples and consecrated localities of Zeus, Athênê, and Apollo. The following sentences from Mr Grote are a more faithful expression of the facts now alluded to than can be given in any words of ours:—

'The names of Orpheus and Musæus (as well as of Pythagoras, looking at one side of his character) represent facts of importance in the history of the Grecian mind: the gradual influx of Thracian, Phrygian, and Egyptian religious ceremonies and feelings, and the increasing diffusion of special mysteries, schemes for religious purification, and orgies (I venture to anglicise the Greek word, which contains in its original meaning no implication of the excess to which it was afterwards diverted) in honour of some particular god—distinct both from the public solemnities and from the Gentile (or family) solemnities of primitive Greece—celebrated apart from the citizens generally, and approachable only through a certain course of preparation and initiation, sometimes even forbidden to be talked of in the presence of the uninitiated, under the severest threats of divine judgment. Occasionally such voluntary combinations assumed the form of permanent brotherhoods, bound together by periodical solemnities as well as by vows of an ascetic character; thus the Orphic life (as it was called), or regulation of the Orphic brotherhood, among other injunctions partly arbitrary and partly abstinent, forbade animal food universally, and on certain occasions the use of woollen clothing!'

The worship of Dêmêtêr at Eleusis, near Athens, and at Samothrace, was celebrated in the form of 'mysteries' (which we shall afterwards more specially allude to), and a long legendary explanation of the origin of the Eleusinian establishment was current at the temple, bodying forth the character and pathetic history of the goddess and of her daughter Persephinê, on whose account she had been tried with the severest sufferings, and stood forth as the Mater Dolorosa of the Grecian world. These two personages, called the Mother and Daughter by pre-eminence, furnished in their sad but finally triumphant history an interesting and pathetic subject to the national mind; but in the mysteries, where it was acted over, a degree of horror and exaggeration seems to have been thrown into it, such as could not have been endured in a published recital.

Dionysus (Bacchus), the God of the Vineyard.—The primitive worship of Dionysus was associated with the festivals at the vintage and at the opening of the new wine—this last occasion being a period of unusual joviality. We have in the deification and worship of this god a combination of awe towards the mysterious power that year after year sustains the fertility of

the vineyard, of the excitement of wine itself, and of the marked love of festivity and demonstration inherent in the mental constitution of the Greek. Like the early worship of Dêmêtêr, the Dionysiac festival was essentially rural in its origin, although afterwards it was wrought up into one of the most exciting entertainments of city life.

It has been stated above that the foreign orgies and ecstatic and special rites of the seventh and tenth centuries B.C. attached themselves to Dionysus as well as to Dêmêtêr. We must again quote from Mr Grote as to the altered character of the worship of the wine god:—'The god Dionysus, whom the legends described as clothed in feminine attire, and leading a troop of frenzied women, inspired a temporary ecstacy, and those who resisted the inspiration, being supposed to disobey his will, were punished either by particular judgments or by mental terrors, while those who gave full loose to the feeling, in the appropriate season and with the received solemnities, satisfied his exigencies, and believed themselves to have procured immunity from such disquietudes for the future. Crowds of women, clothed with fawn skins, and bearing the sanctified thyrsus, flocked to the solitudes of Parnassus, or Kithærôn, or Taygetus, during the consecrated triennial period, passed the night there with torches, and abandoned themselves to demonstrations of frantic excitement, with dancing and clamorous invocation of the god; they were said to tear animals limb from limb, to devour the raw flesh, and to cut themselves without feeling the wound. The men yielded to a similar impulse by noisy revels in the streets, sounding the cymbals and tambourine, and carrying the image of the god in procession. It deserves to be remarked that the Athenian women never practised these periodical mountain excursions, so common among the rest of the Greeks: they had their feminine solemnities of the Thesmophoria (in honour of Dêmêtêr), mournful in their character, and accompanied with fasting—and their separate congregations at the temples of Aphroditê, but without any extreme or unseemly demonstrations. The state festival of the Dionysia, in the city of Athens, was celebrated with dramatic entertainments; and the once rich harvest of Athenian tragedy and comedy was thrown up under its auspices.'

We have thus passed in review the chief members of the divine fraternity that received actual worship in first-rate temple establishments. The goddess *Hêrê* we have alluded to as having almost exclusively a relative position as the wife of Zeus; she, nevertheless, had an indispensable station in mythical story, and was the patron goddess of the once wealthy town of Mykênæ—her temple, the Heræon, between Mykênæ and Argos, was ancient and renowned. In her marital relation to Zeus, she is the personification of jealousy in its most rancorous form, and a vast amount of incident and adventure is put in motion by this characteristic of hers.

With the exception of Dionysus, all the foregoing deities were included among the twelve great gods of Olympus. Among the lesser gods, many of whom never got the footing of actual worship, were Helios (the Sun); Sêlênê (the Moon); Eos (the Morning); Hadês, the nether world of departed spirits; Themis, Justice or Law; Harmonia; the Charities or Graces; the Muses; the Mœræ or Fates; Nemesis, Retribution; the Eileithyiæ, who presided over childbirth; Oceanus and Nereus; and their numerous offspring, the Nymphs, Nereids, &c.

There were certain personifications that were little more than names of attributes or natural facts—such as Thanatos, death; Hypnos, sleep; Atê, reckless impulse; Eris, contention; &c. The employment of personality in these cases was little more than a poetical or rhetorical strengthening of the ideas, such as is done in the compositions of all ages.

The monstrous combinations, the offspring of the gods, and involved in the battles, adventures, and incidents of the mythical world, were such as the Harpies, the Gorgons, the Greæ Chrysaor, Pegasus, Chrysair, Echidna, Chimæra, the Dragon of the Hesperides, Cerberus, the Lernæan Hydra, the Nemæan Lion, Scylla and Charybdis, the Centaurs, the Sphinx, &c.

From gods the Grecian mythology descends to heroes and men. 'A genealogical line, in the case of every locality and tribe, connects the living generation with a divine origin; and in the line of pedigree there occur all the great and renowned heroes belonging to the traditions of the locality or race. Not only were there heroic legends, there was also a heroic worship. The celebrated and ubiquitous Herakles, or Hercules, had chapels or enclosures consecrated to him all over Greece; 'a being,' says the high authority already quoted, 'of irresistible force, and especially beloved by Zeus, yet condemned constantly to labour for others, and to obey the commands of a worthless and cowardly persecutor. His recompense is reserved to the end of his career, when his afflicting trials are brought to a close; he is then admitted to the godhead, and receives in marriage Hêbê. The Twelve Labours, as they are called, too notorious to be here detailed, form a very small fraction of the exploits of this mighty being, which filled the Hêrakleian epics of the ancient poets. Distinguished families are everywhere to be traced who bear his patronymic, and glory in the belief that they are his descendants. The Hêrakleids form among all Dorians a privileged gens, in which, at Sparta, the special lineage of the two kings was included.'

It is easy to see the nature of the interest attached in the popular mind to the exploits of Herakles; a character such as his would be universally accounted heroic, and modern chivalry reproduces a type not very dissimilar. A specimen of a more special hero is presented in Asklepius, or Æsculapius, the head of the medical fraternity in Greece, and belonging especially to the Arkadians, who reckoned him among their heroic progenitors. He was worshipped with very great solemnity at Trikka, at Kos, at Knidus, and in many different parts of Greece, but especially at Epidaurus. The celebrated physicians of Greece, such as Hippocrates, were accounted his descendants, which could be the more easily admitted inasmuch as physic was a hereditary profession. Sacrifices and prayers were offered up to him in behalf of the sick, his temples were in fact hospitals, and their walls were hung round with votive tablets recording the maladies and treatment of persons who had been restored to health by resorting to them; these tablets being consulted as records of experience in the healing art.

The Athenians, among their numerous temples, had several dedicated to the heroes of their early traditions. The great names of Theseus and Erectheus were kept in eternal recollection by this means.

Hero-worship is in all times a favourite outgoing of human sentiment and regard. When a great character has shed a benign influence on an age, either by practical benefits or personal fascination, by the exhibition

of mental power, or the advancement of human wellbeing, there arises a response of admiration and reverence wherever the influence is felt; and so agreeable to human nature is this expression, that the opportunity of calling it forth must be ranked as an addition to the benefits conferred by distinguished worth. The loving admiration of greatness is one of the many occupations that are relied on for giving a current of agreeable interest to the course of human life. Like the worship of the supernatural powers, it also implies the feeling of entranced submission, and eminently assists in maintaining the rank and degrees of human society.

CEREMONIAL OF RELIGIOUS WORSHIP.

The ceremonial modes of worshipping divinity in ancient times were so different from what modern nations are accustomed to, that a great effort is necessary to enable us to picture to ourselves a scene at one of the temples on a festival day, or to imagine the general aspect and bustle of a town or rural population during the seasons of mingled worship and amusement. The killing of a beast in the presence of a congregation of pious worshippers, with all the accompaniments witnessed in a slaughter-house, would form one astounding incident of divine service, difficult to be reconciled with the notions of the present day. The smell of roasting flesh, done to a cinder before the assembled multitude, would fill the temple during three-fourths of the service, while an anthem was sung, accompanied both with instrumental music and a ballet performance by trained dancers. The retiring congregation, instead of dispersing quietly and in a solemn mood to their respective homes, would probably be seen keeping together along the same line of streets towards some public grounds where gymnastic contests were forthwith to commence, and where a host was already assembled in their places to view the boxing, wrestling, racing, and other contests. If the morning hours were passed in the temple, the forenoon would witness such performances as are now-a-days chronicled in 'Bell's Life,' and the day would be concluded with dinner parties and deep drinking, the soberest being expected to indulge freely in companies assembled to do honour to the gods.

We shall now endeavour to present a brief description of the principal peculiarities in the worship and ceremonial of the Grecian religion:—

Temples.—The form of a Greek temple of the cultivated ages of Greece is well known through the incessant repetition of it in the public buildings of modern Europe. But such buildings belonged only to a late period of Grecian history. For centuries the sites of religious worship were chiefly sacred enclosures, planted with trees on some spot chosen for convenience, or imposing from its natural aspect. To people with little sense of the finer combinations of landscape beauty the tops of mountains are the most awe-inspiring situations: a huge mountain, rendered impressive by spreading its massy slopes away from beneath the feet, and a wide expanse of surrounding scenery, strike the general mind with a sense of grandeur and power, and dispose the thoughts to fall into a current of religious veneration. To worship 'on every high hill' was one of the features whereby the Jews were wont to identify an idolatrous worship. The primitive

Greeks, like other nations, chose high and commanding sites for consecration to the gods. They also fell in with the other feature coupled with worshipping on mountain tops in the prophet's denunciation; 'under every green tree' they felt themselves subject to a sacred influence which they associated with the service of the gods. Consecrated plantations or groves were the seats of deities and heroes in ages when marble columns and the orders of architecture were unknown, and continued to be a cheap and easy method of indicating religious reverence and performing the rites of worship. The trees that were planted were chosen, from their extended foliage, as a means of shade, or from their supposed preference by the divine tenant of the grove. The place for the people to assemble would probably have the aspect of a closed avenue, with the altar and statue of the god at the end; and the congregation would loiter about, leaning on the trunks of the trees, sitting at the roots, or reclining on the shaded ground. Except during the progress of the solemn parts of the service, there was no great restraint upon the freedom of the worshippers, who might move about and talk to one another, only avoiding certain words and phrases of ill-omen.

We have already quoted a remarkable testimony to the religious fascination exerted on some minds by a tree, which is strongly in point in illustrating the choice of woods and plantations for places of worship. In the creation of supernatural objects of reverence many influences concur: there are appearances that awe the observer into submission and homage, and there are localities and situations where the disposition *to worship something* is strongly felt; on the one hand the mind is struck with the impression of a god's being present, and on the other feels a craving for a god to worship. Probably the inborn disposition to religious reverence had as much to do with the creation of the pagan gods, as the impressions of the supernatural in nature or in human life.

The stone temples of the Greeks being externally such as we see in the modern imitations, and in the still existing remains of Athens, Rome, and other places, it is necessary only to remark, that while there were such erections as oblong enclosures of pillars without any continuous wall or roof, the buildings were generally completely formed and covered in, having a pillared portico surrounding them. The interior, like our churches, was fitted up for the purpose of accommodating a congregation in the great body of the hall: in the middle, or towards the farther end, was the statue of the god surrounded by a railing; the altar naturally lay in front of the image, and round it were the places of the priests and officials, the choir, and the party bringing the sacrifice or offerings on each particular occasion. There was a large opening in the roof over the altar, through which the smoke of the burning flesh (generally only a small part of the beast), together with the fumes of the sweet wood burnt as incense, arose to the sky, to regale the senses of the deity, who was considered as actually partaking of the sacrifice. Seats were usually provided. The proportions of the building, instead of being a matter of disregard, as in our churches and public and private rooms, were determined by the feeling or laws of symmetry; while the decoration of the walls and roof would depend on the wealth of the subscribers. The interior of each frequented building came in course of time to be hung round with votive gifts of all kinds—articles of gold, silver, or brass—basins, jugs,

tripods, &c.; pictures, devout and thanksgiving inscriptions, in a manner that may be still observed in Roman Catholic churches. It became a sight to see the array of offerings in the wealthy and celebrated temples, converting them into museums of rare and costly articles and curiosities, besides antiquarian and religious relics. The oracular temple of Apollo at Delphi was peculiarly rich in votive offerings, the acknowledgments of the wealthy and powerful who had achieved successes under the guidance of the god; besides being a sacred sanctuary, or bank, where treasure was deposited for safe keeping.

Temples were built and supported, as churches are now, at the expense of the state, of the neighbourhood, or of private parties subscribing or bequeathing money or lands. The whole of a temple establishment, taken together, with its officials and their residences, had a greater resemblance to modern abbeys and cathedrals than to the parochial churches of this country. Each temple was dedicated to a god, as an abbey is dedicated to a saint; and there might be in one town more than a single establishment to the same deity, with different surnames or characteristic epithets attached to his name. The idea of systematically accommodating all the temple-going population with sitting-room at one time was never thought of, there being apparently much more of desultory worship by individuals and families than of simultaneous attendance on divine service. The exhibitions and entertainments associated with worship, but performed out of the temples, were the occasions of the most numerous assemblages.

Statues.—The erection of statues to gods and heroes was systematically attended to in the times from the sixth century downwards, and was the consequence as well as a cause of the great progress made in the art of sculpture. In each temple a statue of the god was set up at the far end in a standing or sitting posture. The most costly temple statues were made of ivory and gold; the naked parts being ivory, and the robes and draperies gold, upon a wooden core. The great statue of Zeus Olympius in the temple at the locality of the Olympic games was said to have been a sitting figure of this species of workmanship sixty feet high. Both it and the temple were the work of the sculptor Phidias, and the statue is considered to have been probably the most imposing object of art that was ever presented to the human gaze.

Previous to the age of sculpture, a pillar of stone or wood placed in the consecrated grove, perhaps inscribed with a name, was all that designated the presence of a god or hero. The earliest carved statues were rudely executed in wood, and it was a considerable time after the chiselling of stone statues had come into practice before figures of the gods were the subject of the sculptor's art. The consecrated post, or rough carving that had been in use for centuries in connection with a deity, had acquired a prescriptive veneration; and to attempt to remodel the divine images according to new-fangled conceptions was at first held to be somewhat impious. Accordingly it was not until a considerable time had elapsed that sculptors, whose 'prentice hand was exercised upon the Olympian victors, received commissions to form statues of the gods, and to let loose their imagination in giving ideal shapes to supernatural beings. But in the fifth century B.C. the innovation was completely accomplished, and the whole strength of the sculptural genius was allowed free scope in this department. Hence

followed the fitting up of temples universally with masterpieces of the art, and the abundant diffusion of images of the gods, as well as mythological representations of every description. Every public place in Athens became peopled with statues: they were found in the common streets, as well as in all private dwellings having any pretensions to ornament and taste.

The place of the statues in a temple being usually a recess in the farther end, a curtain was hung across in front of it, which was undrawn on the occasions of public worship.

Altars.—These, as is well known, were stone pillars, or erections of stone or earth for burning sacrificial animals or portions of them, and for marking a spot as a centre in the marshallings and arrangements of worship. The altar was, still more than the statue of the god, the point of the worshippers' regards. They were of endless variety—from a few clods piled up on the ground, to the elaborate carved pillars of the times of high art. They might stand directly on the floor of the temple, or be raised upon a stone platform with an ascent of steps. It was the convention not to use erections to the so-called subterranean gods (a certain number of deities supposed to dwell in the shades, and thereby distinguished from the Olympian and terrestrial gods), but to sacrifice in troughs or ditches dug in the ground. Some altars were expressly designed for sacrifice, and others were intended merely for the deposit of offerings without either blood or fire—such as cakes, fruits, and presents of inanimate things. The name of the deity was inscribed on the altar, and the act of inscribing a name served to consecrate trees or plants to deities or heroes, which was often done by individuals to gratify their own private feelings. There was always a solemnity at the consecration of altars and statues: the chief peculiarity of the proceeding was the anointing them with oil, and to this was added some initiatory offering or sacrifice of more than the ordinary degree of cost and splendour.

Officials.—The absence of a sacerdotal order, such as we find among the Chaldeans, Egyptians, and Jews, was a peculiarity of the Grecian religion. The worship of primitive Greece was performed by the same persons that held the high offices of civil society: the king offered sacrifices for the people, the chief of a tribe for his clansmen, and the head of a household for the members of the family. So the commander-in-chief of an army is seen performing the rites preliminary to a campaign or special juncture of military affairs. And this custom of performing public and domestic worship by the heads of the state and of families never went entirely out, although the practice arose of appointing men specially to discharge the priestly function at the established temples of the gods. The modes of appointing sacred functionaries included every method of election in modern use: popular suffrage, patronage by chiefs and civil rulers, hereditary descent, and the choice by lot—which last method being extensively practised in regard to civil offices, would in religious appointments be considered a direct appeal to the pleasure of the god. The office of priest, even when separated from civil dignities, was very honourable; and the qualifications were a sound body, a good character, and an unblemished and somewhat abstemious and ascetic life. Absolute chastity and celibacy were not requisite in the generality of cases; such a degree of strictness, where it was required, implied the prevalence of Asiatic notions.

Among the officials at an extensive temple establishment we find the

priests, chief and subordinate; a class called *parasites*, who were employed apparently to collect the revenues and take charge of the temporalities; the *kerykes*, criers, or heralds, who were attendants on the altar, and called silence at the commencement of the service, and pronounced the words of dismissal at the close; the sacrificers, and the temple menials.

The nature of the worship or service in each case determined the nature of the sacred offices required. The priests who presided over the holy mysteries had the special designation of *hierophants;* and in the Eleusinian mysteries the offices ran in a particular family. The oracular temples required functionaries for the express end of delivering the oracles, as well no doubt as for the purpose of concocting them. The responses at Delphi were given by a priestess, who was obliged to live secluded from the intercourse of men. She and the other officials of the temple were chosen by lot from among the inhabitants of the town of Delphi—a town whose whole existence was bound up with the temple.

The system of appointing priests by lot, and for a limited period, seems to have been very common; at Athens especially, where civil functionaries were frequently renewed, and most of them chosen by lot, this practice would be in regular operation. There also the priests, like all other officials, had to go through a strict process of accountability on their retirement from office, which would especially refer to the management of the temple funds and revenues.

As the divine service proper included music and dancing, a trained choir of singers, instrumental performers, and dancers, must be considered as an essential portion of each temple establishment. The ancient practice was for the whole congregation to lift the song or psalm and join in the dance; but in later times, when a more refined and varied music, and a more elaborate system of dancing, came into use, a paid choir and orchestra had to be substituted. The dancing at public worship and private parties was far more complicated than our domestic dances, being, in fact, of the nature of a ballet performance as seen at our Italian Opera.

Offerings, Libations, and Sacrifices.—The pagan worship universally incorporated in the divine service some species of offering, gift, or devotion of means and substance to the god, who, according to a rude conception of deity, was considered to derive gratification from being hospitably entertained and loaded with gifts by the worshippers. Articles of food were presented as offerings; drinks were poured out as libations; and the still higher gratification of a meal of fresh meat—the crowning act of hospitable entertainment in those times—was afforded by bringing a choice beast to the altar, and slaying it in the presence of the divinity.

The simple offering consisted of the fruits of the earth and the usual articles of diet, which were brought to the altar by way of grateful acknowledgment, especially at the harvest season. Libations consisted of water, milk, honey, wine, or oil, or mixtures of these; they always accompanied sacrifices on the principle of supplying drink along with food; but they were practised on other occasions, as at the commencement of every meal.

The offering is a very obvious suggestion of religious respect towards the gods, and that from a variety of motives. Besides being a species of hospitable entertainment, it may be looked upon as a gift or present springing from reverential affection, or a grateful response to a worthy

superior; and also as something bestowed under an impulse of terror to appease and mollify a powerful being. It corresponds with the practice, so prevalent in early society, of giving presents to superiors, protectors, and men in high office, from motives alternately of love and fear. The confirmation of this tendency into a fixed institution is finally effected by the wants of the priestly order.

The origin and instigation of bloody sacrifices is a more complex point, and has given rise to much speculation. The difficulty chiefly lies in discriminating the original motives of the institution from the meanings that came subsequently to be attached to it. The great idea of the expiation of *human guilt* by the substitution of innocent blood certainly did not belong to the early Greek views of sacrifice, whatever might have been the case with other nations. The substitution of one victim for another to appease an angry being, or comply with a demand, was certainly practised; but this was a very different thing from the idea of atonement as now understood. The following considerations seem to be more or less involved in the institution as it appeared in the pagan world:—

1. The idea of hospitality to the gods already alluded to.—Whatever luxury in the way of food any people happened to enjoy, they included among their offerings to the divinities; and in rising above vegetarianism to the more hearty stimulus of an animal diet, they made both their human guests and their superhuman objects of worship fellow-partakers of their table; whence the leading of animals to the altar to give the gods their share of the feast. It was literally believed in Greece that the smoke and flavour of a burning piece of meat were actually inhaled and enjoyed by the god on whose account the sacrifice was offered. The habitual presentation of animals at the altar served also to support the temple service, inasmuch as a portion of each offering was bestowed on the priests. The practice was even made a source of revenue to the state in Athens, where the skins and other portions of the sacrifices were appropriated as a public tax.

2. As a solemn and tragic display accompanying the adoration of the supreme powers of the world, the destruction of life would form an appropriate incident of worship.—The fact of death is calculated more than any other to inspire emotions of awe and dread. The disappearance of a living being from the world of existence is an object of terror, of mystery, and of tenderness. Of all human incidents it is the one most powerfully, and variously, and universally affecting the human sense, the human intellect, and the human heart. It is the fact of all others that arrests and engrosses our regards—the grandest and most solemnising influence of our life. No unsophisticated mind can treat it lightly, no mind whatever can despise it when it is close at hand. It is the great antithesis of existence, the counter-fact to all that is consummate in human enjoyment. 'The skull at the feast' expresses the summit of our dread confronted with the summit of our happiness. Death is the contrast to life in the fulness of its joys, the intoxication of its bliss—the most impressive actual contrast that the human mind can conceive.

As an influence of subduing terror there is nothing to compare with death. Both the serious influence and the exciting stimulus of this passion are produced in the highest degree by what is tragic.

If we suppose, therefore, a human being desirous of testifying by some

appropriate and expressive action the solemnity that possesses the mind on some occasion of solemnity, what within the whole sphere of experience can be selected comparable to an incident of death? The sincere believer must think of his god when excessive danger awaits himself, and above all, in the hour of impending doom: he must connect loss of life more than any other event with the will and purposes of the supreme powers. Looking upon death as in many cases the result of divine wrath, he must at times consider himself as an agent of the deity in destroying a living being. It follows as a consequence that he should look upon the taking away of life as a befitting part of the ceremonial of worship, and that he should not have at all times a scrupulous regard to the sacredness of humanity itself.

3. It is especially to be borne in mind, in the various points connected with the ancient religions, that they belonged to times when all the effusions and demonstrations of sentiment and feeling were what we should consider violent, boisterous, and extreme. The worship of primitive man would consist of a vehement outburst of solemn emotion, because at other times he would choose to indulge in outbursts of a kind the reverse of solemn. As yet far from the tranquillising habits of later times, under which the impulses of men are calmed down and distributed in a serene film overspreading the whole life, the half-civilised human being indulges in vehement and uncontrollable outbursts of frantic emotion, religious at one time, mirthful at another, and again triumphant and exulting; and with little discrimination or taste includes them all in one religious demonstration. Nothing less than a bloody sacrifice could serve as the counterpart of uproarious drinking scenes, enthusiastic thronging processions, wild and maddening dances, stirring songs, and noisy music.

4. There is one other consideration that we must be content with slightly hinting at. In all the extreme manifestations of human hate, cruelty, or revenge, in the cherished feelings of implacable resentment and destructive wrath, it is impossible not to recognise as lurking in the depths of man's nature an appetite for blood—a genuine bloodthirstiness, such as bursts forth openly in many of the inferior animals, and in the savage communities of our own race. It is even hard to say whether the delight in field-sports would not be somewhat modified if the last vestige of this feeling were extirpated, and the freest scope given to the large capacity of tender emotion inherent in the human frame. At all events it is open for us to suppose that, at the early institution of bloody sacrifices among some nations, acts of solemn butchery were a gratifying and entertaining spectacle to the worshippers, and were kept up, like the other ceremonial, for the purpose of pleasurable excitement. The taste for witnessing violent death-scenes, and for the recitals of murders and executions, although very much subdued in modern times, is yet far from being extinct.

In confining our consideration to the Grecian sacrifices, we must remain satisfied with explanations such as the foregoing, to the entire exclusion of the idea of expiation for guilt, which, even allowing it to have been ultimately connected with the killing of animals at the altar, cannot be pronounced to have had any share in the original adoption of sacrificial rites among the people.

We must now proceed to describe the operation of public sacrifice; and

in so doing we shall endeavour to embrace all the particulars of an ordinary diet of divine service, or a complete act of public worship:—

The beasts chosen for sacrifice were the pig, goat, bull, ox, cow, sheep, lamb, cock, &c. or the domestic animals in general. The victim was led to the temple loose, and with as little appearance of constraint as possible. On the occasion of a great public sacrifice, where perhaps a large number of victims were offered up, a procession was formed, and marched to the temple with a band of music. At the door of the temple there was a vessel of holy water, where each person had to dip his hands or feet for the purpose of purification, which was required as preliminary to every solemnity. The company bringing the sacrificial offering then arranged themselves round the altar, where also the victim was drawn up. They were all dressed in holiday attire, with garlands on their heads. The outer article of dress, the cloak or plaid, had sometimes to be of a particular colour for sacrificing to certain gods. The priests who received the worshippers were dressed in rich state robes, said to have been much of the same make as for the great dignitaries of the civil service. The rigid purity and cleanliness of sacerdotal robes, and likewise of the garments of the worshippers, is a frequent topic of allusion.

The celestial gods were sacrificed to after sunrise or early in the morning; but to the manes of the dead, and the subterranean gods, and in the mysteries, worship was performed at night.

The victim and all the accompaniments being prepared, the officiating priest went round the altar, sprinkling it with meal and holy water, a fire being prepared with fagots all ready for being lit. He then turned and besprinkled the company with a fagot or olive branch dipped in the water. A crier then pronounced the words, 'Who is here?'—the congregation exclaimed, 'Many and good.' The priest now said, 'Let us pray;' and delivered a prayer, containing a general request for the acceptance of the oblations, and for health and happiness to the worshippers, with any special favour that might be desired on the occasion. The forms of prayer seemed to have been always very much the same, only the priest was prepared to adapt himself to the specialities of the worshipper's case. Before the prayer, or about the commencement of the service, the crier uttered the well-known injunction, 'to preserve a religious silence;' which meant more particularly an abstinence from all words or phrases accounted of bad omen.

The examination by the priest of the soundness of the victim, and its willing devotion to its end, was now proceeded with, if this were not previously done. It was expected to taste of its usual food, by way of showing that it was in good health, and to stand quiet while a knife was drawn along its back from head to tail. The victim being approved of, a second prayer was said, and the priest took a cup of wine, tasted it, made the company taste, and poured the remainder between the horns of the victim; after which frankincense was strewed on the fire, to send forth an odorous smoke.

Some one of the officials—either the priest, the crier, or some assistant—killed the victim, either by striking him down or cutting his throat, according to the usual style of the shambles. If the animal escaped the blow, kicked, or struggled, it was accounted a bad omen; and this, or any of the other accidents deemed unlucky, might lead to an abrupt termination of the

proceedings. The criers and assistants then went on with the cutting up and flaying of the animal, while it was the business of the priest, or of a special soothsayer, to examine the entrails, by turning them over with a knife, and thereby to read the fortunes of the worshippers, and obtain the prognostications usually sought from the structure of the entrails of sacrificed victims. Many sacrifices being made for the express purpose of ascertaining the pleasure of the gods with reference to some projected enterprise, this part of the service was on such occasions the chief centre of interest; and in all cases the party offering the victim carried home a certain measure of hopes or fears for the future from the soothsayer's report on its internal viscera.

The portion of the animal burned on the altar consisted of the thigh bones, which were covered with pieces of fat, and with thin slices cut here and there to represent the body and bulk of the animal. The priest and the person sacrificing then offered a joint prayer to the god; and as the company continued in the temple while the offering was consumed, the time was occupied with a song or hymn sung to the flute, with the accompaniment of a dance performed round the altar. There were hymns composed to the honour of each temple deity, and sung during the acts of public worship, either by the assembled congregation, or by a hired chorus of singers and flute-players. The hymns sung in honour of Apollo had the special designation of the Paean; the hymns in honour of Dionysus, which gave origin to the Drama, were called Dithyrambs. The people naturally believed that the entertainments that were pleasing to themselves were acceptable to the gods; and hence they constituted music, the singing of hymns of praise, and dancing, a regular part of public worship.

The remains of the sacrificed animals were then partitioned among various claimants. The priests had one share—in some places, as at Athens and Sparta, a portion was claimed by the civil authorities—the remainder was carried away by the offerer, who had usually a feast on the same day, and who might either use it up at his own table, or contribute it to a public entertainment, or send it in presents to his friends. A convivial dinner in some place or other was the usual conclusion of an act of worship or sacrifice at the temples, being, in fact, a continuation of divine service. All such feasts were begun and ended by a libation of wine poured out before the company with a pious exclamation.

Public Festivals.—The temple worship of the gods might be either by private parties at their own convenience, or by the public generally on set days, which were seasons of holiday cessation from work, and of enjoyment and recreation. There being no Sabbath in the Grecian world, the occasions of public worship and holiday rest came on at irregular intervals, and often lasted two or three days at a time. Opportunities for seeing sacrifices and entertainments at some temple or other in Athens would be very frequent; and such persons as were disposed for a day or half a day of idleness might be gratified with a temple service almost any day of the year. The days sacred to gods and heroes were abundantly numerous.

But there were special seasons of universal jubilee and recreation, where a whole town was released from ordinary labours, and thought of nothing but the festival. On the continent may still be witnessed scenes of revelry and excitement exactly parallel to the festivals of the ancient pagan

world; but there is nothing in this country that can enable us adequately to conceive them. Our Christmas time somewhat resembles the festival of the Apaturia held in Athens and over all the Ionian tribes, which was a season of family and clan reunions, lasting three days, and held annually about the beginning of winter; but it was a season of far greater public importance than our Christmas holidays. Young men arrived at the age of eighteen devoted their hair at a sacrifice, and presented themselves to be publicly registered at this solemnity.

The following account of the festivals of the ancients is from the description of Libanius:—'Cattle and wine, and whatever else is the produce of the fields, are brought from the country. Garments also are purified; and every one is anxious to celebrate the festival in perfection. Those that are in want of garments are permitted to borrow such as are requisite to adorn themselves on this occasion from those that have abundance. When the appointed day arrives, the priests open the temples, pay diligent attention to the statues, and nothing is neglected which contributes to the public convenience. The cities, too, are crowded with a conflux of the neighbouring inhabitants, assembled to celebrate the festival, some coming on foot, others in ships.

'At sunrise they enter the temples in splendid garments, worshipping that divinity to whom the festival is sacred. Every master of a house precedes, bearing frankincense, a servant follows him leading a victim, and children walk by the side of their parents, some very young, and others of a more advanced age, already feeling the strong influence of the gods. One having performed his sacrifice, departs; another comes forward to perform it. Numerous prayers are everywhere poured forth, and words of good omen are mutually spoken.'

As already hinted, the exercises of public worship were followed up by public entertainments of all kinds, and with festive parties and merry meetings, public and private.

Our limits will not allow us to enter into a specific description of more than one or two of the more prominent festive seasons observed at Athens; but the Dionysia, the celebration of the Eleusinian mysteries, and the Panathenaic festival, are too remarkable to be passed wholly unnoticed:—

The Dionysia, or the festivals in honour of Dionysus or Bacchus, were held three times in the year. One of these occasions was the rural Dionysia, held throughout the cantons of Attica, representing the festival in its primitive character; the other two were the Lenaea, and the Greater or City-Dionysia—both held in Athens, and representing the exaltation and enlargement of the festival by city tastes and varied entertainments. The Lenaea were celebrated in winter, the City-Dionysia in spring—both with dramatic entertainments. The original choral dance and dithyrambic song accompanying the worship of Dionysus became transformed into the Greek drama, whose great distinctive peculiarities as compared with the modern drama are connected with its origin.* The trains of half-intoxicated revellers forming a Bacchic procession were licensed to pour forth

* See the 'Essay on the Genius and Character of the Greek Tragedy,' prefixed to Professor Blackie's translation, lately published, of the 'Lyrical Dramas of Æschylus,' a work eminently calculated to bring the modern English reader face to face with the living picture of ancient Greece in some of its grandest phases.

abuse and scurrility upon any one that they might pass; and this custom, refined upon by Athenian intellect, was the origin of Comedy. The practice of abusing and libelling living and present men, chiefly public characters, never wholly disappeared from Athenian comedy, although it needed the repeated exercise of public authority to keep it within bounds.

The principal feature of the Dionysiac solemnity, in addition to the dramatic representations in the theatre, was the procession. This, as conducted at Athens, was an extension and refinement of the rural processions, but still essentially wild and boisterous in its character. Besides the personation of satyrs, and the wild movements of the Bacchantes, there were carried baskets of figs, vessels of wine adorned with vine branches, the Phallus, or symbol of male generative force, and a van containing the image of the god, with musicians singing and playing on flutes, cymbals, and tambourines. Scenes of drunkenness were considered by no means unbecoming at this festival.

We have already had to remark that bodily excitement to the pitch of frenzy was common to the worship both of Dionysus and Dêmêtêr. The other feature peculiar to the worship of those deities was the celebration of *mysteries*, or rites open only to persons that had gone through a ceremonial process of initiation. The mysteries of Eleusis in honour of Dêmêtêr were the most noted of the kind in Greece; and a brief allusion to what is known respecting these will serve to convey an idea of this peculiarity of the ancient religions.

The Eleusinian mysteries were celebrated every year, in September, and the festival occupied ten days. Both sexes and all ages were admitted; but foreigners and bad characters at home were excluded. It was considered a duty of every Athenian citizen to go to Eleusis at least once, for the sake of being initiated. The intending communicants on each occasion formed themselves into a procession, and marched on foot from Athens to Eleusis, a distance of ten or twelve miles. Various ceremonies of purification were gone through, and sacrifices offered, with solemn processions, and the carrying about of lighted torches. Sports and contests, as was usual at all festivals, were regularly exhibited. The ceremony of initiation was nocturnal, and took place in a large building called the Temple of the Mysteries. The candidates entered with myrtle crowns and clean garments, dipping their hands in the holy water at the door as they passed. The hierophant, or chief actor of the mysteries, received them with a solemn admonition to preserve their minds pure and undefiled on so august an occasion; and then read out of a book the import of the mysteries. He next put certain questions to them, as to whether they had duly prepared themselves by fasting, &c.; to all which they returned answers in a set form. A vast exhibition of strange objects and scenes then opened up before them: thunders and lightnings alternating with pitch darkness, noises and bellowings, apparitions of horror, and dramatic spectacles of the most terrible excitement. The sad mythical history of the goddess was represented, it would appear, with an exaggeration of details that struck dread into the spectators. Obscene rites and symbols seem also to have been mixed up with the revelations. The shock given to the spectators must have been terrible. The whole scene was an extreme instance of tragedy, according to Aristotle's account of its intention—namely, to purify the heart by pity.

and terror. It was an accumulation of all the objects and stimulants of the most tumultuous passions of pathos and terror. The motive of the display would appear to have been to operate as a counteractive to these passions in ordinary life, by the abiding remembrance of one volcanic outburst of emotion. There was a saying, that persons that had once visited the cave of Trophonious, where a similar dish of horrors was served up, were never known to smile afterwards; and perhaps some permanent solemnising effect was anticipated from the exhibition of the mysteries.

Egypt was the country where mystic concealment was carried to the greatest length as a means of spiritual power, and many of the Egyptian rites seem to have passed into Greece. Nothing could be more opposed to these ancient practices than the publicity of all kinds of transactions, civil and sacred, in the free countries of modern Europe. Almost the only vestige of mystic secrecy belonging to society in the present day, is that associated with the relations of the sexes—a subject habitually disguised under a veil of studied expression; but it is a matter of dispute whether this custom really contributes to purity of feeling on the matters in question, seeing that secrecy often produces the contrary effect of inflaming a prurient imagination on the very points intended to be ignored.

The Panathenaic Festival, or the festival of all the tribes in honour of Athênê, the patron goddess of the city, was one of the great and universal Athenian solemnities. This was an annual festival in the month of July or August; but once in every four years it was celebrated with peculiar solemnity, and was then called the Greater Panathenaea, as distinguished from the festival of ordinary years, which was called the Lesser. The two distinguishing peculiarities of the festival were the procession and the recitation of the poems of Homer, which last was from time immemorial the literary entertainment of this festival, as the acting of plays was of the Dionysia.

The Panathenaic procession was made up of a vast multitude of Athenian citizens of both sexes, young and old, and likewise of the metics, or resident foreigners, with their wives and children. It was organized without the city, at a place called the Ceramicus, and marched along by a fixed route to the Parthenon on the Acropolis. The object of the ceremonial was to convey a richly-embroidered garment for the statue of Athênê in the Parthenon; and a solemn act of public worship, with all the usual accompaniments, took place, during which the statue was robed with the garment. The sculptured frieze of the Parthenon, of which there are portions now in the British Museum, represented the array of this vast procession. First came a detachment of old men, carrying olive branches in their hands; next were men in middle age, bearing shields and spears, and attended by the metics, who carried small mimic boats, to denote their foreign origin. After these followed the women, natives and foreigners. To these succeeded a chorus of young men, crowned with millet, who sung hymns to the goddess. Next were a train of virgins of rank, carrying baskets, with the utensils and materials used at the service in the temple, and attended by the metics' daughters, who carried a sort of umbrellas and little seats. The rear was brought up by boys.

The games and contests at the Panathenaea were numerous and splendid, and included musical and poetical competitions.

The great national festivals of Greece were the Olympic, Pythian, Isthmian, and Nemean games, which were a combination of worship, sport, festive recreation, and every kind of sociable entertainment. Distinct from these were the Amphiktyonic assemblies, which came to have great political influence in the country, but whose origin was not at all connected with political federation. Mr Grote has shown that the early custom that prevailed among families and tribes, of inviting their neighbours to join in their festivals, was the real germ of the great Amphiktyonic league, which continued through historical Greece to meet twice a year, and discuss national affairs, but more especially questions connected with religion.

RELIGION OF COMMON LIFE.

In the affairs of daily life, which require a knowledge of the course of the world, and of the consequences of actions, the interference of a more than human wisdom has at all times been desired. It is natural that men should resort to the supernatural powers for guidance in the dark and doubtful issues of life: the ruling agency of creation is inevitably assumed as well instructed in the future. The reference to oracles and prophets, divination by lots, dreams, sacrifices, birds, and other appearances, magic and necromancy, were constituent portions of the Grecian religion in its bearing on common life. By all these methods the will of the gods was interpreted, and human conduct regulated.

In every kind of divination by omens and auguries there was necessarily an appeal to mere chance. But the conventional signs agreed upon as showing favourable or unfavourable indications, have often some degree of natural expressiveness, or are such as act upon the untutored mind in the way of inspiring hope or fear. For example, all sudden and terrible phenomena of nature—earthquakes, eclipses, sudden and unusual deluges, the unexpected withering of trees and fruits—being calculated to produce terror and alarm, easily led the mind to evil forebodings. So any extraordinary emotions or perturbations seizing an individual were interpreted as of disastrous import. The distinction between the right and left members of the body was a very wide basis of discrimination in every sort of augury: things happening on the right being accounted lucky, and on the left the reverse. The act of sneezing was fixed upon the Greeks as an indication of the will of the gods, probably from its being apparently a capricious effect, and for that reason withdrawn from human explanation, and related more directly to the agency of the gods. There were many superstitions related with encounters on the public ways; some of them, as for instance a hare crossing the road, are still in existence. Words expressing heavy calamities, death, destruction, and imprecations, were looked upon as ill-omened, and were carefully avoided in the time of public sacrifices and during acts of divine worship.

In examining the entrails of sacrificed animals, it was a good omen to find the parts sound and healthy, and of their usual form and dimensions. The priest examined successively the liver, the heart, the gall, the spleen, the lungs, and the bowels; and every sort of irregularity or exception to the average healthy anatomy was interpreted into some specific unfavour-

able prognostication. Omens were also taken from the other circumstantials of the sacrifice—the burning of the fire, the streaming of the blood, the windings of the smoke, or the motions and noise of the liquids poured in the libations. Fancy or whim would in many cases rule the interpretation; but for the most part the stress was laid on points that would strike the general mind as encouraging or the reverse.

The flight of birds was a subject of divination both in Greece and Rome. An artificial distinction being drawn between the quarters of the heavens, as well as between the right and left hands, the appearance of birds in any one quarter had a fixed significance. The east was preferred to the west by a not unnatural regard to the commencement of the day. Again, the motions of birds about a person, a place, or an army, were interpreted according to the notions of the character of the species. Birds of prey following a multitude would naturally suggest ideas of slaughter and carnage. The croaking of ravens was expressive: by some unknown circumstance or turn of thought, the raven was sacred to the oracular god, Apollo. Cocks were prophetical in matters of war, and were sacred to Mars.

The belief in dreams is an ancient and universal superstition. It is possible to find reasons for the coincidence of dreams with events on some occasions, and there may be cases of coincidence beyond the reach of any explanation yet known; but the practice of relying on dreams for guidance in action is substantially as irrational as any other form of obsolete divination. In procuring a prophetic dream there was a regular form of proceeding by fasting, temperance, sacrifice, and choice of dress. If a frightful dream occurred to any one, or a portentous omen of any description, propitiatory sacrifices might be offered to avert the evil consequences.

Magical rites and necromancy, or an appeal to departed ghosts, also ranked among the varieties of divining the will of the gods concerning the duties and conduct of men.

HEYNE: A BIOGRAPHY.

THE struggle of genius with adversity, though oftentimes represented, never ceases to be interesting. Every variation of this story has its own graces, and conveys its separate and peculiar lesson. Whoso passes worthily through the straits and perils of difficult and painful circumstances is thereby recommended to the sympathy and admiration of mankind. Men love to trace the paths by which he journeyed—to contemplate, as from a quiet and retired distance, the obstacles and dangers he survived and overcame—to witness, with a wondering and pensive interest, the whole intricate drama of his baffled and renewed endeavours—and are not without a disposition to rejoice in the result, when it is seen that a manly and consistent purpose has been followed by success. The biographies of diligent and able persons are, accordingly, among the most attractive and encouraging studies which can engage the attention of hopeful and aspiring natures; being at once mementoes of triumphant energy and pledges of the possibilities which are open to further and corresponding enterprises. He that can succeed in delineating the outward and inward being and history of a man—especially of a man esteemed eminent and worthy in his generation—will not alone impart a rational and exalted pleasure to those who may attentively consider the delineation, but will likewise contribute something to illustrate and promote that intellectual and spiritual advancement whereof all men are more or less capable, and are morally enjoined to aim after. With some such intent, though on a small and very imperfect scale, it is here proposed to portray the life and experiences of Professor Heyne—a scholar whose reputation has now been long established among the learned, not only in Germany, his native country, but likewise in France and England, and indeed throughout Europe generally. By common acknowledgment of all competent and enlightened scholars, he was a man of solid and excellent attainments, and of a character in nearly all respects remarkable: upright, persevering, steadfast-minded; in what he did and what he suffered a notable example of high intelligence, of quiet and sedulous endeavour, personal energy and helpfulness; and also of a pure, modest, and unpretending probity. Any relation which shall represent, however faintly, the attempts, labours, and performances of such a man, cannot fail to be acceptable to many readers, and to some may possibly prove more instructive, and perhaps no less entertaining, than more voluminous and ambitious publications.

Christian Gottlob Heyne was born at Chemnitz, in Upper Saxony, in the month of September 1729. His father, George Heyne, was a weaver in humble, and even impoverished circumstances. The manufactures of Saxony were in his day visibly declining; and consequently the miseries of his class were almost daily accumulating, and their prospects becoming constantly more and more hopeless. Scarcely could the workman, with his utmost diligence, earn a sufficiency for his own support, still less was he capable of adequately providing for his family. Heyne was accordingly nurtured and brought up in the most extreme and bitter poverty. 'The earliest companion of my childhood,' says he, 'was want; and my first impressions came from the tears of my mother, who had not bread to give her children.' He was also the first-born of the family, and had therefore the completest opportunities for witnessing the various phases of destitution which the household from time to time presented. Many a piteous and distressing spectacle appears to have been exhibited in that poor weaver's cottage, where the father often worked through long weary days—from early morning until late at night—and then perhaps could not find a purchaser for the product of his labour. Scenes of memorable sadness, hunger-pangs, the still despair of stricken industry, were things familiar to the boy from earliest infancy; and with the strange bewildered sympathy of a child, he often looked upward to his mother's face, and wept to see her sorrowful. His was a childhood of that unhappy sort which Charles Lamb has so touchingly depicted—a childhood which has 'no childishness in its dwellings,' no toys, no pastimes, no pleasant or sweet remembrances—nothing but the keen experiences of a premature worldliness, Saturday-night anxieties, the dull oppression and the bondage of despondency. How painful a thing is it that a child should have any curiosity about the price of bread, or be so conditioned as to entertain a fear of being sent away as creditless from a baker's shop! Whoever has *seen* a child in such extremity—not yet hardened or rendered callous by long familiarity with wretchedness—will not readily forget the deplorable dejection of its countenance.

Young Christian Heyne suffered many such rebuffs; suffered them until his young heart grew vindictive and rebellious. It is little known how much unnatural exasperation is kindled in even tender minds by harassing and straitened circumstances. To this poor boy, as he began to apprehend some little of the discrepancies of society, it appeared that people were everywhere combined, as in hostile conspiracy, to render him and those who were dear to him unhappy. The distress occasioned to his parents by the haughty bearing of 'purse-proud' traders—forestallers, who bought up the linen made by the poorer people at the lowest, and often unjust prices, to sell in other districts at the highest—aroused and fostered in him a burning indignation. Often, on Saturday nights, had he seen his mother 'wringing her hands and weeping,' when it happened that she had come back with the web of the father's weaving—the product of a week's hard toil, and not unfrequently of sleepless nights—having been unable to find any one to buy it. On such occasions the boy or his sister would sometimes be sent out with the same piece of cloth, to try if *they* could get rid of it, at any of the places where the mother's application had been unsuccessful. Necessity, as Heyne has related, often constrained the poorer sort to sell

the sweat of their brows for anything the forestallers thought well to offer, and to make up the deficiency between the price and value in starvation. The imperiousness and petty tyranny of these unjust dealers so powerfully and painfully laid hold upon his mind, that when afterwards, at school, he first heard of 'tyrannicide,' he says he conceived the project of acting the part of a Brutus on all those 'oppressors of the poor' who had so often cast his father and mother into straits, deeming that it would be a noble deed to rid the earth of them for ever. 'And here,' adds he, 'I had the first instance or illustration of a truth which I have since frequently had occasion to observe—that if the man who is armed with a feeling of his wrongs, and possessed of any considerable strength of soul, does not risk the worst, and become an open criminal, it is solely owing to the beneficent effect of the circumstances wherein Providence has placed him, which, by fettering his activity, guard him from attempting the destructive enterprises his excited passions may suggest. That the oppressing portion of mankind should be secured against the oppressed is apparently regarded, in the scheme of the inscrutable Wisdom, as a most important element of the present system of things.'

Heyne's parents, though thus miserably situated, did what they could to procure him some little education. At an early age he was sent to one of the humbler sort of schools, where he soon obtained the praise of taking delight in learning, and of making more than ordinary progress. Before he was ten years old he even began to assist in raising the money for his school fees, by giving lessons to a neighbour's child in reading and in penmanship. When the common school course had carried him as far as he could be advanced by it, he became desirous, as he says, of 'proceeding into Latin.' Unluckily, it was beyond his parents' means to provide the money for such a purpose. This was a great grief to the boy, and he bore it about with him for many days, perceiving little likelihood of ever being delivered from it. However, one day when he was greatly distressed, even to sobs and tears, by pondering on his cheerless prospects, he happened to be sent to fetch a loaf from the shop of a baker, who was his godfather, and a near relation of his mother; and as it chanced, was questioned by the worthy man concerning his discomposure, which, after a stream of tears, the boy succeeded in revealing, and presently had good reason to be comforted. The godfather was in easy circumstances, and as Heyne records, he magnanimously offered to pay out of his own pocket the weekly sum required for the desired teaching, imposing in return only one condition upon the pupil—namely, that he should come to him every Sunday, and repeat such part of the Gospel as he had learned by heart: an arrangement which Heyne considered had one very good effect upon him, inasmuch as it exercised his memory, and taught him to *recite* without bashfulness or hesitation.

Overjoyed by his unexpected fortune, the boy started off homewards to proclaim the grand intelligence, triumphantly tossing up his loaf into the air, and capering with barefooted adroitness to catch it as it descended. His almost delirious excitement was naturally detrimental to the successful management of sleights-of-hand, and after a few surprising hits, the loaf fell into a puddle: an unfortunate circumstance, which brought the elated experimenter a little more to his senses. However, the child-

ings which he anticipated turned out nowise serious, as his mother was also heartily delighted by the news which he communicated. The father, it seems, was less content, thinking possibly that the boy was smitten with an ambition beyond his circumstances, and that all this eagerness for learning, in one so unfavourably conditioned, could prove ultimately little other than the root of manifold vexations, if not of lifelong disappointments. Nevertheless, the boy remained at school, making as much progress as he could under many great impediments, the respectable godfather continuing all along to pay the fees with commendable regularity. At the end of two years the schoolmaster discovered that the pupil had pretty well exhausted his own scholarship: a discovery which Heyne declares he himself had made before, but had entertained an uncomfortable delicacy about announcing it.

It now seemed likely that Heyne's education was to be considered as completed. As in straitened households every accession of help, however small, is of consequence, it was naturally enough the desire of his parents that he should, as soon as possible, quit his school-books, and try his hand at weaving. To this the boy evinced an inveterate repugnance, and in opposition to the wishes of his father, entertained a 'longing to get into the grammar-school of the town,' where he hoped to prosecute with more effect the studies he had begun. Often with a sad and wistful look did he linger by the walls of the school-house as he passed, and sighed as he reflected on the hardship of being excluded from participating in the advantages enjoyed there by many who had probably far less reverence for knowledge. What bliss would it have been to have exchanged places with some miserable truant, whose slow brains were so jaded with immeasurable taskwork as to be in danger of being crushed by the burthens laid on them, and to whom the very *name* of 'school' was grown an abomination, suggesting only an everlasting weariness, like that of Sisyphus in the dreary shades, rolling his huge stone up to the mountain-top, to return for ever on his head!

However, the Fates are sometimes generous, and even that which we most despair of shall now and then, by some rare and unexpected accident, turn out an actual event. An eccentric clergyman, who was Heyne's second godfather, came by chance to hear of the boy's unusual anxiety after learning, and had the curiosity to send for him, for the purpose of testing both his knowledge and capability by an examination. The result was satisfactory, and the good parson promised that he 'should go to the town school,' and that he himself would pay the charges. What a sudden turn of happiness for Heyne! He declares it to be impossible to express the joy which ravished him on that occasion. Away, then, is he despatched to the 'first teacher,' is examined in customary form, and 'placed with approbation in the second class.' The second class, however, having conceited notions of its respectability, almost declines to tolerate the poor boy's presence. 'Weakly from infancy,' says he, 'pressed down with want and sorrow, having never had any cheerful enjoyment of childhood or of youth, I was still but small in stature, and my class-fellows, judging by appearances, had a very slight opinion of me.' Nevertheless, 'various proofs of diligence,' and praises from the master, gradually convince the fellows that he is worthy of his place. His diligence,

indeed, was not a little hampered by want of books. Sebastian Seydel, the eccentric clergyman, appears to have kept his promise somewhat too closely to the letter: he paid the quarterly fees, provided the pupil with the requisite blue-cloak—rather a *coarse* one, says Heyne, but perhaps not on that account the worse for use—and gave him a multitude of useless volumes that were lying on his shelves; but to supply him with appropriate and sufficient school-books was not in the bond. The truth is, the eccentric Sebastian was often short of cash, and had need at all times to exercise a rather rigid thrift. A man of magnificent liberality of intention, but of insufficient means, he appears to have been as charitable as he could well afford to be; and his memory is worthy of respect among poor students everywhere, as one who really *helped* a brother scholar in extremity, when richer, and probably more highly 'respectable' persons, turned indifferently away, and, like the Levite of the parable, 'passed by on the other side.'

To meet the inequalities of his situation, Heyne had every day to borrow the books of some of his class-fellows, and to copy out such parts as were assigned for the lesson; a practice which, though it kept him in a manner always more or less dependent, was not unserviceable so far as his progress in study was concerned. On the other hand, the honest Seydel would exercise a rigorous supervision of his proceedings, and gave him from time to time certain hours of instruction in the Latin tongue. Sebastian in his youth had learned to make Latin verses, and it seemed to him that the grandest accomplishment of a classical education was even that of making Latin verses. Accordingly Heyne had to adjust himself to this Egyptian taskwork of brick-making without straw. 'Scarcely,' says he, 'was "Erasmus de Civilitate Morum" got over, when I, too, must take to verse-making, and all this before I had read any authors, or could possibly possess a suitable store of words.' There is every evidence that the good Sebastian was a *pedant*—a meagre, contracted man, whose *meaning* might be well enough, but whose insight cannot be honestly commended. He was also, says Heyne, 'passionate and rigorous—in every point repulsive;' a stiff-necked, self-willed, desperate 'old bachelor,' and vain to absurdity of his ridiculous gift of Latinity. 'These qualities of his,' continues Heyne, 'all contributed to overload my youth, and nip away in the bud every enjoyment of its pleasures.'

While thus burthened and depressed by the Sebastian task-labours, he was likewise impeded and held down by almost every sort of want, vexation, and discouragement. 'The school-course was bad: nothing but the old routine—vocables, translations, exercises; all without spirit or any proper purpose.' Still, so far as the virtue of such matters went, he appears to have made a very excellent proficiency. In the course of time he became competent to write both Latin and Greek verses, and could even render in that shape the 'discourses which he heard at church.' Some 'ray of hope' thereupon began to shine within his mind. A certain small degree of self-respect and self-confidence was also now awakened in him by his success in a school examination, conducted in the presence of the superintendent or chief inspector of schools, who happened to call in his vocation at the Chemnitz Grammar-school. Dr Theodor Krüger, as Heyne informs us, was 'a theologian of some learning for his time;' and

while at his visit the rector was teaching *ex cathedra*, the doctor suddenly interrupted him, and put the question, Who among the scholars could tell him what might be made by way of anagram from the word *Austria*? It seems that this whim had entered the inspector's head from the circumstance that the 'first Silesian war' was just begun, and some such anagram, reckoned extremely happy, had recently appeared in a certain newspaper. None of the boys knew what an anagram really was: the very rector looked blank and considerably perplexed. As none answered, however, he began to give 'a description of anagrams in general.' Heyne instantly set himself to work, and sprung forth with his discovery—*Vastari!* This differed somewhat from the newspaper one, and of course was all the better. 'So much greater was the superintendent's admiration; and the more, as the successful aspirant was a little boy on the lowest bench of the *secunda*.' Dr Theodor growled applause; but in so doing he set the entire school about the ears of Heyne, 'as he stoutly upbraided them with being beaten by an *infimus*.'

It was this 'pedantic adventure,' as Heyne calls it, which first gave an impulse to the development of his powers. He began to take some little credit for himself, and in spite of all the oppression and contempt in which he languished, resolved on struggling forward. Still, he says, this first struggle was sadly ineffectual—was soon, indeed, regarded as a piece of mere conceit, and brought on him 'a thousand humiliations and disquietudes.' The perverse way, too, in which the old parson treated him—the discontent of his parents, and especially of his father, who thought that, had the boy stuck by weaving, the household might have been to some extent improved in circumstances—the pressure of want, and the almost grudging entertainment he received at home—the feeling of backwardness and degradation which accompanied him continually—all this would allow of 'no cheerful thought, no sentiment of worth,' to spring up within him for the adornment or elevation of his nature. 'A timorous, bashful, awkward carriage shut me out still farther from all exterior attractions. Where could I learn good manners, elegance, a right way of thought? Where could I attain any culture for heart and spirit?' Upwards, however, he still strove with resolution. 'A feeling of honour, a wish for something better, an effort to work myself out of this abasement, incessantly attended me; but being without direction, it led me for the most part into clownishness, sullenness, and misanthropy.' At length, by a favourable turn of circumstance, a place was opened for him where some training in these respects became obtainable. There was a young gentleman, lately introduced into society, at the 'west end' of Chemnitz, for whom his friends desired a little private instruction in the languages. He was too select a personage to be sent to school, and not old enough for college; therefore it came to pass that Heyne, being heard of and recommended, was chosen for his temporary tutor. 'As these private lessons brought me in a *gulden* monthly (that is to say, about two-and-sixpence sterling), I now began to defend myself a little against the grumbling of my parents. Hitherto I had been in the habit of doing work occasionally, that I might not be told I contributed nothing to the earning of my bread; clothes and oil for my lamp I had earned by teaching in the house; these things I could now relinquish; and thus my condition was in some degree

improved. On the other hand, I had the opportunity of seeing persons of better education. I gained the good-will of the family; so that, besides the lesson hours, I generally lived there. Such society afforded me some culture, extended my conceptions and opinions, and also polished a little the rudeness of my exterior.'

In this new situation Heyne appears to have had at least some partial enjoyment of existence. Indeed he fell privately in love with his pupil's sister, made and destroyed innumerable Greek and Latin verses in celebration of her charms, and had the audacity to 'dream of sometime rising high enough to be worthy of her.' This, however, was but a flattering delusion, though he did succeed in acquiring the friendship both of herself and of her mother. The grand concern which meanwhile occupied his thoughts was, how he should be able to get to the university at Leipzig. Old Sebastian, with his munificent 'liberality of intention,' had promised to stand good on this occasion; and it is thought he would have done so with the greatest pleasure, had it cost him nothing: as it was, he merely gave extremely liberal promises, but could not by any device be brought to produce a fraction of hard cash; and elsewhere for Heyne there was no resource. At length, wearied, it is surmised, by the youth's importunity, he determined to bestir himself; and accordingly he directed his assistant, who was then going to Leipzig, to conduct Heyne thither—the latter doubting not but that at the end of the journey something pleasant would turn up. The two arrived in safety; but when the anxious student made inquiries respecting the arrangements which he supposed his patron had made for him at college, he found none whatever had been made, and moreover, that there was not a *groschen* of money provided to meet any of his necessities. This information the assistant gave him, and then left him at a lodging-house, declaring that anything further was not in his commission.

Heyne had in his pocket exactly two *gulden*, and not the slightest prospect of obtaining any more when these should be expended. Starvation stood visibly before him at not many days' distance. A youth without connections, in a strange place, shabbily attired, and destitute of books, with simply five shillings in his purse, he found himself set down at the threshold of Leipzig University, 'to study all learning,' and build his fortunes out of chaos. No wonder that sheer despondency at first overmastered him. He speedily fell sick; and, as he says, recovered only 'to fall into conditions of life wherein he became the prey of desperation.' All the miseries which, from ages immemorial, the 'poor scholar' has been heir to, were now, for long years, to be his only portion. How he contrived to live, much more how he managed to study, it is utterly impossible to make out. The hapless Sebastian Seydel, it appears, did occasionally send some churlish pittance, but never until 'after unspeakable solicitations,' and then 'in quantities that were consumed by inextinguishable debt,' and commonly accompanied by disagreeable admonitions. On one occasion he even addressed a letter externally—'*A. M. Heyne, Etudiant Negligeant:*' a veritable and aggravated slander; for, so far from being a 'student negligent,' Heyne was perhaps of all students the most endeavouring and diligent. Witness, for instance, one of his modes of 'pursuing

knowledge under difficulties.' Having no money to pay class-fees, it was only to what are called 'open lectures' he could usually gain admission. There were, however, certain 'ill-guarded class-rooms' into which a needy student might occasionally insinuate himself with little or no fear of being noticed as an intruder. Of such class-rooms Heyne appears to have availed himself according to opportunity, and to have picked up such casual crumbs of knowledge as were thus procurable. It was in this way he studied philosophy under Winkler. Unluckily, the frequency of his attendance excited jealousy among the students, and one day they received him with a violent scraping of the feet—a sort of derisive cheering which was anything but pleasant. Heyne could not venture back; and when the beadle came to him some time afterwards, demanding the fee, he says he had 'many shifts to make before he could raise it.'

For half a year he would be left utterly without help; then, as if smitten with sudden penitence for his sins, the incorrigible Sebastian would promise to come and see him; but often when he came would 'return without leaving him a penny.' Notwithstanding numerous applications, Heyne never could obtain any public assistance: no *free table* or *stipendium* was at any time procurable. Often he had no regular meal, and not even money enough to buy a loaf to satisfy his hunger. Darkness and the gloom of discontent fell in heavy shadows over his spirit. He longed to die and be at rest, knowing that in the grave there is no *want*. Yet there is always mercy in the world, and the kindliness of gentle hearts ever gushes, even among the arid places where the most unhappy wander. 'One good heart alone,' but yet one, did Heyne find in that parched and boundless wilderness of indifferency in which he lived: one good heart, and that a woman's—beating with sympathy in the sound and honest bosom of the poor servant-girl of the house at which he lodged. She beheld him with compassion, and with a rich benevolence that shames the givings of the wealthy, she brought him of her scanty store—nay, risked almost everything she had, to relieve him in his frightful need. The noble womanly Samaritan! 'Could I but find thee,' said Heyne, when years of better fortune had attended him—'could I but find thee, even now, thou good and pious soul, that I might repay thee what thou then didst for me!'

How he was sustained under so much pressing and protracted misery Heyne declares to be to himself a mystery. 'What carried me forward,' says he, 'was not ambition—any youthful dream of one day taking a place, or aiming to take one, among the learned. It is true the bitter feeling of debasement, of deficiency in education and external polish—the consciousness of awkwardness in social life, incessantly accompanied me. But my chief strength lay in a certain defiance of fate. This gave me courage not to yield—everywhere to try to the uttermost whether I was doomed without remedy never to rise from this degradation.'

Among the Leipzig professors, the only one from whom Heyne appears to have derived any advantage was Ernesti. In some way, which is not very clear to us, he succeeded in gaining admittance to Ernesti's lectures; and here, as his biographer Heeren has remarked, he first learned 'what interpretation of the classics meant.' Another professor, named Crist, a rather singular and fantastic personage, who dwelt considerably on 'taste, elegance of manners, and the like,' was pleased to take some notice of him,

and procured him occasional employment as a private teacher. He also sought to direct him a little in his studies, advising him 'to imitate Scaliger, and read the ancients, so as to begin with the most ancient, and proceed regularly to the latest'—a sage recommendation, reminding one of Goldsmith's pleasantry about the folly of presenting a man with ruffles who was destitute of a shirt. Of all teachers, however, it is clear, as Mr Carlyle observes, that Heyne's best teacher was himself. 'No pressure of distress, no want of books, advisers, or encouragement, not hunger itself, could abate his resolute perseverance. What books he could come at he borrowed; and such was his excess of zeal in reading, that for a whole half year he allowed himself only two nights of sleep in the week, till at last a fever obliged him to be more moderate. His diligence was undirected or ill-directed, but it never rested, never paused, and must at length prevail. Fortune had cast him into a cavern, and he was groping darkly round; but the prisoner was a giant, and would at length burst forth as a giant into the light of day. Heyne, without any clear aim, almost without any hope, had set his heart on obtaining knowledge; a force as of instinct drove him on, and no promise and no threat could turn him back.' In the depth of his destitution he had the almost unparalleled temerity to refuse a tutorship, which promised to be a comfortable appointment, but which he considered it advisable to decline, inasmuch as it would remove him from the university. Crist, aware of the urgency of his circumstances, had sent for him one Sunday, and made him the proposal; 'and thereupon,' says Heyne, 'there arose a violent struggle within me, which agitated me for several days; and to this hour it is incomprehensible to me where I found resolution to determine on renouncing the offer, and to follow out my object in Leipzig.' It was extremely difficult for a man in his extremity to ascertain the wisest course; and doubtless every considerate and 'practical' person, who might have been consulted, would have advised the contrary of what Heyne decided on; but yet there is ever truth in the soul's instincts, and he who accepts their intimations with purity and singleness of purpose, may rely on them with confidence, and esteem them the best guides of his volition.

Heyne remained at the university; and by dint of starving, and the precarious employment of private teaching, managed both to keep the life in him, and prosecute his studies. It is utterly impossible to tell *how;* neither his own narrative, nor the 'Biographical Portraiture' by Professor Heeren, affords us any sufficient information in regard to these particulars. All we can gather is, that he lived 'in a dreary vicissitude of want,' spinning out his existence from day to day, unwarmed by any ray of comfort, except the 'fire that burned or smouldered unquenchably in his own bosom.' It appears that his sole means were the scanty gratuities of Sebastian, and the casual and inconsiderable fees which he earned by private teaching. Sometimes perhaps he might work a little in that capacity which the Germans call 'classical hodmanship'—translating and transcribing passages of Greek and Latin for the use of authors and philosophers who were somewhat 'rusted' in their languages, or who could turn their talents to better account as builders than would be practicable while acting as 'hodmen' for themselves. At one time he had an engagement of this sort under the once famous but now forgotten Crusius, who was then

'first professor of theology' at Leipzig—with what remuneration is not apparent. One thing we can discern with satisfaction, that in such employments as are open to him Heyne does not fail to acquit himself with credit. As a consequence, his talents and endeavours began by degrees to attract notice, and his perverse situation to excite a little sympathy; and 'here and there some well-wisher had his eye on him, and stood ready to do him a service.'

In this way had Heyne struggled up to manhood. Two-and-twenty years had he endured as severe hardship as happened to any man of his generation. Moreover, his difficulties were yet far from being ended. In the latter days of his college life he had betaken himself to the study of the law, though without the slightest prospect of being able to turn it to any immediate practical account. Other branches of learning he continued meanwhile to prosecute, and indeed held himself ready to lay hold of anything that might turn up to his advantage. While thus waiting, as it were, to catch the strings of possibility, a trifling incident occurred, something akin to that 'pedantic adventure' before mentioned, which brought about important changes in his situation. Among the persons in Leipzig who had extended towards him some little measure of favour was a French preacher named Lacoste, who, dying suddenly, was by Heyne somewhat lamented; and he, as it is said, inspired by personal sorrow, composed a long Latin Epicedium on the occasion—a poem nowise intended for the press, but which certain of the deceased's hearers were so extremely pleased with as to cause it to be printed 'in the finest style of typography and decoration.' Now, among the students in Leipzig at that time were the respectable and respected sons of Count Brühl—prime minister and favourite of the Elector of Saxony, and also a person of high repute for his shining patronage of literature. Brühl's sons, it is surmised, sent home to Dresden a copy of Heyne's elegantly-decorated Epicedium; and the count, struck with the decorations, was pleased to express himself well contented with the poem, and to say, moreover, he should like to have the author in his service.

'A prime minister's words,' says one who has written on this matter, 'are not as water spilt upon the ground, which cannot be gathered; but rather as heavenly manna, which is treasured up and eaten, not without a religious sentiment. Heyne was forthwith written to from all quarters that his fortune was made: he had but to show himself in Dresden, said his friends with one voice, and golden showers from the ministerial cornucopia would refresh him almost to saturation; for was not the count taken with him? and who in all Saxony, not excepting serene highness itself, could gainsay the count? Over-persuaded, and against his will, Heyne at length determined on the journey, for which, as an indispensable preliminary, "fifty-one *thalers*" had to be borrowed; and so, following this hopeful quest, he actually arrived at Dresden in April 1752. Count Brühl received him with the most captivating smiles, and even assured him in words that he, Count Brühl, would take care of him. But a prime minister has so much to take care of! Heyne danced attendance all spring and summer, happier than our Johnson, inasmuch as he had not to "blow his fingers in a cold lobby," the weather being warm; and obtained not only promises,

but useful experience of their value at courts. He was to be made a secretary, with five hundred, with four hundred, or even with three hundred thalers of income; only in the meanwhile his old stock of fifty-one had quite run out, and he had nothing to live upon.'

Heyne is convinced at length that he must look about him for something more tangible than Count Brühl's promises. By good-luck he obtained some employment in his old craft of private teaching, which sustained him through the winter; but when this ceased he remained without resources. What to do he could not well conceive. In Dresden, however, there are publishers and booksellers; so Heyne goes to some of them to solicit work in authorship. He is so far fortunate as to get intrusted with a few translations; but, as the writer just quoted says, 'his emoluments would scarcely furnish him with salt, not to speak of victuals.' In a short time he was so far reduced as to be obliged to sell the few books he possessed; and by and by he even finds himself with only the universal canopy for the ceiling of his bedchamber. 'A licentiate in divinity, one Sonntag, took pity on his houselessness, and shared a garret with him; where, as there was no unoccupied bed, Heyne slept on the floor, with a few folios for his pillow. So fared he as to lodging: in regard to board, he gathered empty peaseods, and had them boiled: this was not unfrequently his only meal.' The dogs of any Lazarus in any generation have fared better. However, after 'incredible solicitations,' Heyne at length, in the autumn of 1753, obtained—not his promised secretaryship at five or four hundred thalers, but the subordinate post of under-clerk in the Brühl library, with *one* hundred thalers—a salary scarcely enough to preserve him from starvation, but which was doubtless very welcome. In this way was Heyne 'taken care of' by the illustrious Count Brühl. Let young scholars think of it, and as far as mortals are concerned, depend on no one but themselves.

Heyne may be nevertheless considered as having now in some sort got to ground. After struggling long with the rough tempestuous breakers that surge above the shoals of worldly life, he is finally washed ashore—on a barren and uninhabited island—an island also wellnigh uninhabitable, and needing more than Crusoe ingenuity to yield anything worth the gathering. Heyne, however, sets to work, and, out of such available soil as he finds in the Brühl Library, produces his first book. This was a carefully-prepared edition of 'Tibullus,' which was printed at Leipzig in 1755—a work reported to exhibit remarkable talent, inasmuch as 'the rudiments of all those excellences by which Heyne afterwards became distinguished as a commentator on the classics are more or less apparent in it.' To whom should the same be dedicated but to the 'Illustrious Henry Count von Brühl?' So accordingly stands it on the title-page in highly-imposing Latin—*Illustrissimo Domino Henrico Comiti de Brühl inscripta.* But though thus propitiated, the illustrious Brühl paid no regard to it; nor indeed did Germany at large pay much; though in another country it fell into the hands of Ruhnken, by whom it was rightly estimated, and with him lay waiting, as appeared thereafter, to be 'the pledge of better fortune for its author.'

The profits of the 'Tibullus' were not enormous, though it appears they served to cancel a few outstanding debts; and thus, with the aid of-

the hundred thalers' regular income, the steam of life was languidly kept up. Unhappily for Heyne as well as others, in 1756 the very memorable Seven-Years' War broke out; Frederick of Prussia advanced on Dresden, 'animated with especial fury against Brühl,' whose palaces and high places were accordingly ere long reduced to ashes, and, with other wreck and devastation, there was an end of 'seventy thousand splendid volumes.' Heyne, it seems, had been engaged in studying Epictetus, and publishing an edition of his 'Enchiridion;' from which work his biographer Heeren affirms 'his great soul had acquired much stoical nourishment.' Heyne had evidently need of all the support Epictetus could yield him, for now he was again cast homeless on the world. By translating pamphlets, writing articles for newspapers, and by other such journeywork of authorship as happened to turn up, he contrived, though narrowly, to elude starvation, and save the authorities of Dresden the expense of a parish coffin. At a time when he was desperately 'hard up,' the poet Rubener, with whom he had some slight acquaintance, came to him with the offer of a tutorship, which Heyne, knowing the penalty, dared not at the moment do otherwise than accept. Tutorships he habitually abominated; but Want, like Death, regards no man's scruples or conveniences.

The tutorship did not prove so bad as he expected. Indeed we come now upon a little 'cypress-and-myrtle oasis' of romance—a thing one could scarcely have calculated on in so hard and stony a history as Heyne's. He was engaged to teach the son of a Herr von Schönberg; and on entering the Schönberg house, he says he was 'ushered into a room where sat several ladies engaged, with gay youthful sportiveness, in friendly confidential talk. Frau von Schönberg, but lately married, yet at this time distant from her husband, was preparing for a journey to him at Prague, where his business detained him. On her brow still beamed the pure innocence of youth; in her eyes you saw a glad soft vernal sky; a smiling, loving complaisance accompanied her discourse. This, too, seemed one of those souls clear and uncontaminated as they come from the hands of their Maker. By reason of her brother, in her tender love of him, I must have been to her no unimportant guest. Beside her stood a young lady, dignified in aspect, of fair, slender shape, not regular in feature, yet soul in every glance. Her words, her looks, her every movement, impressed you with respect: another sort of respect than what is paid to rank and birth. Good sense, good feeling disclosed itself in all she did. You forgot that more beauty, more softness might have been demanded; you felt yourself under the influence of something noble, something stately and earnest, something decisive that lay in her look, in her gestures, not less attracted to her than compelled to reverence her.'

This latter lady bore the name of Theresa Weiss; she was the orphan daughter of some musical professor, and was present here as the humble companion, having formerly been the schoolmate, of the Frau von Schönberg, whose young brother the destinies had assigned to Heyne for a pupil. The first sight of Theresa seems only to have inspired him with esteem. 'What I noticed most,' says he, 'were the efforts she made to relieve my embarrassment, the fruit of my down-bent pride, and to keep me, a stranger, entering among familiar acquaintances, in easy conversation. Her good heart reminded her how much the unfortunate requires encouragement,

especially when placed, as I was, among those to whose protection he must look up. Thus was my first kindness for her awakened by that good-heartedness which made her among thousands a beneficent angel.'

In a few days Heyne commenced his duties, and saw the esteemed Theresa no more till the next spring, she having accompanied the Frau von Schönberg in her journey to Prague. With the pleasant breath and goodly verdure of the month of May, he had, however, the pleasure of enjoying some days in her society, in agreeable country quarters at Ænsdorf, whither he had been invited to follow the family with his pupil. This is perhaps the most delicious season in the whole of Heyne's life. Though nowise a poetical man, he almost rises into poetry when reproducing it from memory. 'The society of two cultivated women,' says he, 'who were of the noblest of their sex, and the desire to acquire their esteem, contributed to form my own character. Nature and religion were the objects of my daily contemplation; I began to act and live on principles of which till now I had never thought; these, too, formed the subject of our constant conversation. The loveliness of nature and the charms of solitude exalted our feelings to a pious and absorbing ecstacy.'

Heyne informs us further that Theresa discovered, sooner than he, that her friendship for him was growing into a passion. Does he mean to insinuate that Theresa first acknowledged her susceptibility? If she did, there were doubtless reasons for it: Heyne was a slow man, remarkably unexcitable, and needing, like a flint, to be struck before he could exhibit fire. He seems to have been a man of almost preternatural bashfulness. He may have found it difficult to receive the notion that any interesting woman would ever love him. There are some rare examples of men of this description. And what if the amiable Theresa could perceive all this, and with a womanly compassion take it upon her to smoothe the way, and by some very gentle hint, given at the right time, indicate her tender inclinations? Let none condemn Theresa should such turn out to be the fact. But it is hardly likely to be ascertained now whether or not it *was* the fact. It may suffice for us to know that, in one way or another, Heyne and Theresa were led to consider themselves as lovers. Glad hours of a most exquisite communion were for a while their portion, and then fate cast them wide asunder; and the gulf of distance and of difficulty between them was but slenderly bridged over by an enthusiastic and melancholy correspondence.

Heyne accompanied his pupil to the university of Wittenberg, where he remained for about a year, studying meanwhile, for his own behoof, in philosophy and German history; but at the end of that time the Prussian cannon demolished the university, and sent the students to seek accommodation in other places. The young Schönberg went subsequently to Erlangen, and Heyne was left in Dresden without employment. Theresa was living in his neighbourhood, and is supposed to have rendered him several lover's kindnesses. 'Twice,' says he, 'I received letters from an unknown hand containing money, which greatly alleviated my difficulties.' Who sent them, think you, but Theresa? However, as the cannonading became warmer, she was compelled to take to flight, having first confided her little property to Heyne's charge. Resourceless persons must necessarily stand the brunt of popular calamities, and it was accordingly Heyne's.

lot to abide the issue of the Prussian siege. On the 18th of July 1760 the bombardment of Dresden began. 'I passed several nights,' says Heyne, 'in company with others, in a tavern, and the days in my room; so that I could hear the balls from the battery, as they flew through the streets, whizzing past my windows. An indifference to danger and to life took such possession of me, that on the last morning of the siege I went early to bed, and amid the frightfullest crashing of bombs and grenades, fell fast asleep of fatigue, and lay sound till mid-day. On awakening, I huddled on my clothes, and ran down stairs, but found the whole house deserted. I had returned to my room, considering what I was to do, whither, at all events, I was to take my chest, when, with a tremendous crash, a bomb came down in the court of the house; did not, indeed, set fire to it, but on all sides shattered everything to pieces. The thought that where one bomb fell more would soon follow gave me wings; I darted down stairs, found the house-door locked, ran to and fro; at last got entrance into one of the under rooms, and sprang through the window into the street.' There was evidently no time to lose if he meant to escape destruction. The next morning he was allowed, with other fugitives, to pass out of the city, and found himself at large in the open country with not a *groschen* of money, or any particle of property except a cloak which he had caught up from a tavern.

The thought soon struck him, Whither bound? It seemed that the best thing he could do was to take the road to Ænsdorf, where Theresa and her friend were then staying. They on his arrival received him warmly. He was not favoured, however, with any pressing invitation to remain; for, as he appeared in the character of an altogether destitute man, the family entertained him coolly. In a few days he took his leave; the excellent Theresa being unspeakably distressed by the shabby treatment he received, in which, we are glad to find it said, the noble lady Frau Schönberg had no participation. Spurning at destiny, and hardening his heart, Heyne now roved reckless about the country, and with the earliest opportunity returned to Dresden. He thought there might be just a possibility that his lodging had been saved. 'With heavy heart I entered the city, hastened to the place where I had lived, and found —a heap of ashes!'

Heyne took up his quarters in the vacant and dilapidated rooms of the Brühl Library. These for a while he had liberty to occupy rent-free, but with the utmost scarcity of rations. For many months his condition was extremely destitute and unsettled—wars and penury tossing him hither and thither like a ball. To increase his troubles, in the course of the winter the good Theresa, who had returned to Dresden, fell violently sick, and was given up by the physicians as beyond recovery; she even received 'extreme unction,' according to the rites of the Romish church (being a member of that community); and for some hours was actually considered to be dead. Dead, however, she was not, but became gradually restored to sense and convalescence. Moreover, with her returning strength, she gave intimations of a desire to renounce the Catholic faith, and to become publicly a Protestant. The difference of their religious views had long been a matter of anxiety between Heyne and herself, and she now thought she could see sufficient reasons for conforming to his creed. All

the representations that were made to her of the conventional disgrace and estrangement of her friends that would ensue were of no avail in diverting her from her purpose; and accordingly, after a public renunciation of her former faith, she was received as a convert to the Church of the Reformation. She had not the slightest expectation at this time of ever being united to Heyne upon earth; but she trusted that a common creed might unite them in a kindred destiny in another world. Indeed Heyne himself had at this time fallen ill, and it was only through her nursing and attention that he escaped narrowly with his life. The circumstances of both were now alike cheerless and distracted. Theresa's change of faith had caused her to be forsaken by most of her acquaintances, and her little property had been destroyed in the late calamitous bombardment. In all the wide world she had no true friend but Heyne. He saw that, with a noble courage, she bore up bravely under the consequences which conscience had commanded her to incur, and that even extremest poverty could not compel her beautiful and gentle head to bend or swerve from its serene steadfastness; and so, moved by the influences of love and duty, he said to her, 'Come to me, thou dear one, and let us link our hopeless fates in unison; and if not otherwise, yet in our united helplessness we will be as one: where I dwell thou shalt dwell, and whatsoever of fortune or mischance may be in store for us, we will meekly share together.' This was a determination which could not but expose him to the universal censure of the 'prudent;' yet under the circumstances, it was unquestionably commendable, and Heyne had never any reason to regret it. They were married at Ænsdorf on the 4th of June 1761. Theresa proved a noble wife to him, and with the ornaments that sprung out of her fine affection, adorned and beautified his destiny.

As to the vulgar necessaries of life, they were in some sort realised by Heyne's occasional labours for the booksellers. The clouds and disturbances of war began gradually to clear away, and the hospitalities of friends contributed to eke out the insufficiencies of the still poorly-furnished household. For a while Heyne seems to have been engaged as a sort of factor, or overseer of general affairs, under a certain Herr von Löben, who was a kind friend to him, and left him in possession of his country-house when he himself was driven from it by alarms of war; in which capacity Heyne says he gained some little notion of 'land economy;' and Heeren records that he had, amongst other concerns, to superintend 'a candle manufactory.' While here, an incident occurred which favourably illustrates the character of Theresa. 'Soon after the departure of the family, there came upon us an irruption of Cossacks—disguised Prussians, as we subsequently learned—who, after drinking to intoxication in the cellars, set about plundering. Pursued by them, I ran up-stairs, and no door being open but that of the room where my wife was with her infant, I rushed into it. She arose courageously, and placed herself, with the child on her arm, at the door against the robbers. This courage saved me, and also the treasure which lay hidden in the chamber.' One almost regrets that Heyne should have condescended to save his life by an undignified retreat behind such frail bastion-works as petticoats; yet it is beautiful to see that even bloody-purposed Cossacks, or 'disguised Prussians,' have a certain inextinguishable reverence for the courageous defencelessness of a woman, standing at

their mercy with her infant at her bosom. Surely human nature, in its lowest and worst forms, is never utterly diabolical!

Shortly after this, there arose for Heyne the dawn of better circumstances. Long and weary are the nights, gloomy and cheerless, too, the days of our protracted northern winter; but yet the spring comes in at last, even though it be sometimes rather late in summer: so to honesty and faithfulness, and a manful endeavouring to 'realise our aspirations,' there commonly succeeds some intelligible success; and that 'tide' which is in the affairs of men being taken at the full, leads on, if not to 'fortune,' to at least some practical satisfaction and contentment. 'On our return to Dresden,' says Heyne, 'I learned that inquiries had been made after me from Hanover.' Now what can such unwonted Hanoverian curiosity signify? Heyne is for some time left to guess, but has no gift for guessing right. Nevertheless, the singular enigma is by and by unriddled. Heyne learns that Professor Gessner, of the university of Göttingen, has lately been translated from this sublunary life; and therefore a successor was required to occupy his vacant chair of 'Eloquence.' The prime minister of Hanover, in whom the patronage was vested, had written to Ernesti for advice; and Ernesti, knowing no proper man in Germany, recommended Rhunken of Leyden as a highly desirable person, could he only be prevailed on to take the post. Rhunken declined to leave his country, but ventured to propose a man whose qualifications he deemed worthy of consideration. 'Why,' said he, 'do you seek out of Germany what Germany itself offers you? Why not, for Gessner's successor, take Christian Gottlob Heyne, that true pupil of Ernesti, and man of excellent talent, who has shown how much he knows of Latin literature by his "Tibullus," and of Greek by his "Epictetus?" In my opinion, Heyne is the only one that can replace your Gessner. Nor let any one tell me that Heyne's fame is not sufficiently illustrious and extended. Believe me, there is in this man such a richness of genius and learning, that before long all Europe will ring with his praises.' Rhunken knew nothing of Heyne otherwise than by his writings; nevertheless, his generous and boldly-spoken verdict was accepted. Heyne was sought after, and with difficulty discovered; the appointment was conferred on him; and in June 1763 he became finally settled in Göttingen, with an 'official income of eight hundred thalers,' which subsequently, by various additions, was increased to twelve hundred—a sum, indeed, nowise very considerable, but yet quite sufficient for the needs of a modest and unambitious man of learning like our Heyne, who does not appear to have conceived it to be any part of the scholar's object to be rich, or that the glory of his life consists in living sumptuously.

This, then, is the culmination of Heyne's personal history. He has reached the position for which nature seems to have intended him. What greater blessedness can happen to any man in life? Henceforth his existence is as quiet and fertile in activity as it had previously been desolate and distracted. He lived with little interruption for many years, 'in the quiet and still air of delightful studies.' He became an incarnation, or walking library of profound learning. Though several times solicited to accept appointments of higher distinction and importance, he never quitted

Göttingen; but with a steady devotion to the institution which first afforded scope for his diligence and abilities, and furnished him with the comforts of a settled and honourable position, he remained calmly and contentedly connected with it throughout his life. With the punctuality of the sun he arose each day to renewed intellectual exertion, working sedulously in his vocation as a teacher, and continually adding new and important acquisitions to his treasury of personal knowledge. With unresting diligence he reads and examines into all manner of ancient records, difficult manuscripts, ponderous tomes of accumulated lore and rubbish, and with a keen and ready discrimination, draws from them, for his uses, whatever essence of true and serviceable learning they may contain. Thus hiving knowledge with each studious year, he grows gradually and progressively in influence and consideration with his contemporaries; fails not to be honoured with the reverence and esteem of the learned and the studious both at home and in foreign countries; and even eventually attains to that position of eminence and reputation which Rhunken predicted for him, and is recognised as being, in his own peculiar domain of intelligence and research, unsurpassed, and even without an equal, in Europe.

Heyne, moreover, as a stationed and accredited professor, has now become a person of some civic consequence and elevation. He has a fixed and reputable household, respectable comings in, charges and relations of a civil and public character, audiences with the learned, interests and vanities to adjust and regulate, Burschen irregularities to admonish and restrain, and, upon the whole, a very considerable multiplicity of affairs to superintend and keep in order. He seems to correspond with the poles and the equator—writing 'letters by the hundred to all parts of the world, and on all conceivable subjects;' he teaches three classes daily in his college; appoints and recommends professors; superintends a multitude of public schools; has under his inspection for a number of years the very *freytische*, or free tables of the university, settling the bills of cooks, and being the authorised purveyor of 'commons,' or recognised students' provider; and is, besides, a kind of general administrator of things in ordinary within the entire collegiate jurisdiction. Yet amid all this diversity of labour he is constantly pursuing some private and independent study; he collates and edits, with elaborate annotations, and publishes in a variety of forms, and in manifold editions, many of the most estimable and illustrious masterpieces of ancient literature; writes endless reviews and learned disquisitions, essays, eulogies, verses, and translations, until at length the works of his single head are almost numerous enough to fill the rooms of a public library. Nor are they mere indigested accumulations of learned lumber, not classical pumicestone or indiscriminate 'shot rubbish'—cartloads of ashes, with a sprinkling of pearls and diamonds—not even rugged ore, like the uncoined hills of California; but, as one has said, 'regularly smelted metal, for the most part exhibiting the essence, and only the essence, of very great research, and enlightened by a philosophy which, if it does not always wisely order its results, has looked far and deeply in collecting them.' Of the most important works to which this estimate applies, some brief account shall by and by be rendered.

In his domestic relations Heyne must be reckoned as being upon the whole favourably circumstanced. The good Theresa, though of a melan-

choly temperament, and of a somewhat irritable susceptibility, was nevertheless an amiable and gentle wife to him. Patient and enduring in adversity, she had also the qualities which failed not to grace and beautify the home of his prosperity. Children, too, spring up about their knees to share their love, and to unite them more intimately in the bonds of life; and though some of them died early, making the house to appear vacant which had formerly been rendered cheerful by their presence, yet none of these bereavements left them utterly disconsolate; but out of the pious sorrow engendered by their loss there sprung up graceful and enduring tendernesses, which reconciled the mourners to their fate. Thus amid light and shadow, and the alternations of gladness and distress, the days of their pilgrimage went on in a calm and not ungenial equanimity.

And so the years spin round, until 1775, when the excellent Theresa was called away—away utterly from this land of change, and from sickness which she had suffered long, to another wondrous state of being, where change and sickness shall be no more. Now shall the eyes that have seldom wept shed tears: now shall the pangs that are 'beyond the pitch of human feeling' pierce into the soul which, under all calamities hitherto, has borne itself as with the calmness and indifference of adamant. In deep grief, in speechless agony and anguish, he bends over the form of his beloved with a yearning that is unutterable; and it is as though his desolate affections were driven forth in banishment into boundless loneliness for ever. All life and nature are painfully transfigured by his sorrow; the whole earth seems wrapt in sadness, and the star-lighted heavens look dim and immeasurably remote. And as they bore her away to the 'still dwelling' whose doors may never more be opened, it seemed as if the closing of those awful portals had everlastingly extinguished the presence of hope and love from out the world. 'There,' said he, 'reposes what is left of the dearest that Heaven gave me;' there, in still unconscious slumber, in silent dreamlessness for ever, she sleeps the sleep from which there is no awakening: among the dust and the perishing shapes of her four children, that went before her to that restingplace, she is gathered in the prime and beauty of her days. To him who stands there, beckoning his sorrowing farewells over the chasm that yawns between eternity and time, and in recognition whereof no sign is rendered—to him it now appears, while contemplating that almost perfect love with which the dead had blessed him, that it was indeed 'the strongest and the truest that ever inspired the heart of woman'—a love which made him many a time the happiest of mortals, though it was withal to him the 'fountain of a thousand distresses, inquietudes, and cares.' He remembers that when tears flowed over their cheeks there was sometimes a nameless and yet exquisite delight streaming through his consciousness—a rushing and gracious unison of the currents of joy and sorrow, more sweet, more blessed than any ordinary gladness. And thus it even cheers him to reflect that he shall come one day to rest beside her—'rest from all the carking care, from all the griefs which so often have imbittered to him the enjoyment of his life.'

But apart from these or any kindred consolations, it was not in Heyne's nature to brood long over any sorrow. To persist in lamenting the inevitable is at once contrary to philosophy and religion, and is a hindrance to the right accomplishment of the remaining tasks of life. Accordingly,

Heyne, in conformity with an established plan of his, shortly began to reckon up his several grounds of sorrow, and having fairly written them down on paper, he next wrote over against them his 'grounds of consolation;' and on contrasting them, and striking a balance of the account, he appears to have been satisfied that he had still much to be contented with. 'So,' he piously concludes, 'for all these sorrows too, and these trials, do I thank thee, oh God! And now I will again turn me with undivided purpose to my duty; and thou, my glorified and buried friend, dost even smile on me with approval!' And thus, from the valley of the shadow of death, the scholar and philosopher comes forth again to participate in the light and active interests of the living.

From the sublime to the ridiculous there is often but a step, and here we have the saying once more verified. In less than twelve months after the good Theresa's funeral, Heyne became actually entangled in another courtship! Oh that there were some despotic ukase in operation, to defend elderly and middle-aged gentlemen from making fools of themselves! The match appears to have been brought about in this wise: some time in the summer of 1776, the Hanoverian court physician, Zimmerman, who is popularly known by a meditative work on 'Solitude,' was spending some months in company with one Reich, a Leipzig bookseller, at the Pyrmont Baths. There also came Brandes, the Hanoverian minister of instruction for the time; and with him he brought a daughter, at present unmarried, but to all appearance highly marriageable. On her did Zimmerman and Reich cast sympathising looks, and putting their sensible heads together, concerted a scheme to provide her with a husband. Heyne was but little known to Zimmerman, yet the latter was impressed with the conceit, that it would be rendering him a service to find another wife for him. The author of 'Solitude' accordingly ventured to consult him, to point out the desirableness of such a mate as was this interesting daughter of the minister, and to offer the aid of himself and other friends to bring matters to a pleasant issue, without giving Heyne any particular trouble in the affair. An agreeable wife, if procurable on such easy terms, Heyne could not find it in him to reject. He, however, comported himself with the most philosophical indifference, transacted the greater portion of his courtship at second-hand, and was indeed in all respects as compliant to the plans and wishes of his friends as might be any respectable and commonplace inheritor of royal blood, whose marriage is an affair of international diplomacy. The damsel, too, was of an extremely accommodating temper, having neither preferences nor dislikes, but being dutifully disposed to be guided in a matter so important by the more experienced sense and practised judgment of her father. The father, on his part, was everything that could be desired by a suitor; and thus it came to pass that Heyne was enabled to take home to him, on the 9th of April 1777, a second and very interesting bride, won for him with less perplexity than many a town or country damsel may have experienced in selecting a bunch of artificial flowers, or a ribbon for her Sunday bonnet.

Here was a fortunate event in Heyne's life brought about very foolishly. The majority of chances was obviously against such a match turning out well; but the odd chance, by lucky accident, was hit, and it turned out

admirably. This second wife is said to have proved herself in all respects a true and worthy one. She was a most cheerful and meet companion for her husband; kept his house in the most admirable order; managed and brought up her children, and those of the deceased Theresa, like a genuine and faithful mother; and loved and assiduously assisted Heyne in many of the concerns which he undertook. Her love was *quieter*, and apparently less romantic, than that of her predecessor, and probably, to such a man as our professor, it was therefore considerably more suitable; for Heyne, throughout his life, was rather a solid than a brilliant man; and his affections, though firm and unwavering as a rock, were little accustomed to display themselves in fanciful excitations. Altogether, as we have said, Heyne may be reasonably considered as having been more than ordinarily fortunate in his personal relations.

In his public capacity also nearly all things went favourably with him. As the years proceed, he rises by degrees to be both in name and office the chief man of his establishment. 'His character stood high with the learned of all countries; and the best fruits of external reputation—increased respect in his own circle—was not denied to him.' Besides his claims to distinction as a teacher and a scholar, Heeren represents him as being an expert negotiator and active man of business—modes of activity for which it seems Heyne himself considered his talents to be peculiarly fitted. In proof and illustration of this notion, the ingenious biographer furnishes considerable details of our professor's procedure in managing the secular concerns of his university—a procedure involving almost infinite *finesse*, and an extremely complicated correspondence with the state-appointed ministers who, from time to time, presided over the educational department. Be all this as it may, it is clearly evident that Heyne everywhere inspired confidence in his capabilities and integrity, everywhere was honoured with the consideration and esteem of his contemporaries. In Göttingen, where he was best known, he was an object of general reverence, and appears to have been regarded by the inhabitants as a sort of incarnation of all learning. He rendered many a good service to the worthy burghers, and on one occasion more especially delighted them by reorganising their respected gymnasium, or town school. A further and even more important benefit Heyne was also privileged to perform for them, in the troublesome and dangerous period when Napoleon was subjugating the continent under his splendid usurpation. Heyne was now in his old age, and nothing was so desirable to him as quiet. He in his time had seen the horrors of sacked cities, and he felt that it now behoved him to do his utmost to divert the possibility of such evils from the worthy people among whom he lived. Accordingly, in the belief perhaps that Napoleon was intrinsically a humane man, Heyne made a modest and deferential application to him, soliciting protection (should it please him) for the Göttingen university and its libraries; and even succeeded in obtaining not only protection for the university, but also immunity from hostile invasion for the whole surrounding district. Thus we may perceive that sometimes an old and prudent man may be the deliverer of a city. It is even said, that as matters actually turned out, Göttingen was rather a gainer than a sufferer by the war, inasmuch as under Jerome of Westphalia all benefices were paid with the greatest punctuality, and even muni-

fold improvements were effected in the university's affairs; among which may be mentioned, as considerably the most important, a new and handsome extension of the buildings of the library, erected at the special cost of government.

The interest of Heyne's life is now pretty well exhausted. For some pages past it has had a tendency to flag. Readers are naturally indifferent about the details of prosperity. It is only with the *struggle* of the hero, and not with his repose or the quiet industry which follows victory, that they care to be concerned. Nobody minded Washington after he took to planting cabbages. When you can sit under your own vine, and eat of your own fig-tree, the interest of mankind is ended in respect to your proceedings. It is the penalty which a man pays for his success, that his history thenceforth dwindles into commonplace. So at least it is with all such men as Heyne. Barren of incident, fruitful only in inward progress, in regular uninterrupted industry, embodied in a long series of literary productions, his life for many years seems to have been little other than a succession of studious and quiet days, any one of which would be a fit and almost perfect representative of the rest.

In personal character and outward bearing Heyne appears to have been a kindly and worthy man. Among his townsmen and fellow-collegians, as we have noted, he was held in the highest veneration. In all his relations he is acknowledged to have been just, generously considerate, friendly, and compassionately disposed. He lived in great simplicity, and delighted in all simple and unostentatious pleasures. Had you been passing through Göttingen any time at the beginning of the present century, you might probably have seen him in his garden, moving about with a pair of scissors, trimming the numerous rose-bushes in which his house was pleasantly embowered. He had a love for roses which almost amounted to a passion, and always in the season he kept a large bouquet of them in water upon his desk. Such a delight in the sight and scent of natural beauty would surely be indicative of a gentle heart. That he was really possessed of one, there are even more decided evidences. Though in external appearance he was the grave and methodical professor—the stiff, almost pedantic seeming commentator, and to an undiscerning eye scarcely anything besides; yet under his cold, learned, rock-like exterior there were wells of native pity, which were really never dry, but, as occasion called, would gush forth in deeds of kindliness and sympathy. His own early difficulties and distresses never left his memory. What was better still, when similar distresses were made known to him, he never failed to render something of the encouragement and help which they demanded. Not many authenticated stories of the kind can be positively related, for it is understood that all his charities of this sort were managed according to the divine rule, which recommends that the left hand shall not know what the right hand doeth. It quite contented Heyne to *do* the good—if possible, to do it furtively and with as little semblance of *charity* as was practicable—leaving it quietly behind him when it was done, and going on his way, as the winds pass when they have scattered the seeds which will some day replenish and repair the forest.

Heeren relates that Heyne had great fondness for the charms of natural scenery. He delighted in the fields and skies, and would lie for hours

reading on the grass. His endless communion with books, such as were nowise calculated to entertain the imagination, had not materially impaired in him one of the finest and most ethereal of human feelings. His love of nature, however, is not to be understood as being particularly fastidious or sentimental. There is nothing of the 'view-hunter' in the man: no sickly yearning for the picturesque; but he has the quiet, healthful taste which finds beauty in almost every object—in common hedgerows and pasture-lands, and the humblest flowers that adorn the waysides and the heaths. He cannot affect raptures, nor deliberately indite sonnets to fountains or the moon; but wherever the beautiful shines along his path, he has the sense which can discern, and accept it with satisfaction.

In his intercourse with friends or strangers, of whom many hundreds visited him, Heyne is represented to have been uniformly courteous. In social conversation his urbanity and politeness were perhaps sometimes excessive, though he is reported to have had a habit of 'yawning' when he came in contact with persons who talked largely without saying anything to the purpose. It is therefore evident he was but indifferently qualified to prosper in polite society. He appears, however, to have been well received among the magnates and quality of Göttingen. As evidences of the consideration paid to him, we may mention, that in the latter years of his life the magistracy exempted him, by special act, from all public assessments; and in 1809, when he was eighty years of age, the public boards and learned faculties came together in procession to congratulate him on his birthday; students assembled to do him reverence, and young ladies sent him garlands; and for that day old Göttingen was a place of perfect jubilee, and as far as such things could delight him, the good Heyne had a sufficiency of happiness and honour.

Not the least part of his good fortune must be reckoned the circumstance that he lived to complete all his cherished undertakings. In the month of April 1812, he saw the last volume of his works in print, and is said to have expressed great thankfulness that he had been permitted to perform so much. He was too old now to think of entering upon other projects. What remained to him of life he was content to spend in a quiet and contemplative waiting for the end. And the end came gently, and like a sleep, or as the falling of ripened fruit in the stillness of the autumn. The 11th of July, of this same 1812, was a day of public and popular interest in Göttingen—some anniversary, or other celebration connected with the Royal Society of that city—on which occasion Heyne, as one of the celebrities belonging to it, is reported to have spoken largely, and with more than ordinary vivacity and clearness. The next day, Heeren says he saw him for the last time. It was Sunday evening, and the old man was resting in his chair, very evidently exhausted by the fatigue of yesterday. However, on the Monday morning 'he once more entered his class-room, and held his Seminarium.' Afterwards, 'in the afternoon, he prepared his letters, domestic as well as foreign,' sealed them with all neatness, save one, which was written in Latin, to Professor Thorlacius at Copenhagen, and which Heeren found open, though finished, on the writer's desk. At supper, being alone with his elder daughter, he conversed cheerfully, and at his usual time retired to his bedroom. In the night, the servant-girl, who slept under his apartment, heard him walking up and down—a prac-

tice to which he was much addicted when he could not sleep. Subsequently he went to bed again, and shortly after five in the morning he rose as usual. When the girl inquired how he had been in the night, he replied to her in a strain of jocularity, and seemed in moderately good spirits. She left him to prepare his coffee; and returning with it about a quarter of an hour afterwards, she found him fallen down before his washing-stand. His hands being still wet, it appeared that death had overtaken him while washing. His medical attendant was hastily called in, but Heyne was gone whither no skill could call him back. Thus in the eighty-third year of an honourable old age, he died a painless and peaceful death, like the last of winter nights falling softly into the mild embraces of the spring.

Heyne was buried with appropriate solemnities—with pomps and imposing ceremonials such as were deemed fitting for one of his public and dignified position. Neither was there wanting an emphatic recognition of his merits as a man who had risen from obscurity into notable eminence among the learned. It is written that at Chemnitz, where he was born and nurtured in deep poverty, a grand company of the illustrious and respectable of the land was drawn together and assembled, under the constituted authorities of the place, to celebrate his memory. On this magnificent occasion, the old school album, in which the little starveling boy had inscribed his name, was produced and exhibited for the admiration of the visitors, many hundreds of whom went afterwards to see the poor dilapidated cottage wherein Heyne's father had once weaved, and he himself had cultivated the rudiments of learning in the lowest stages of his fortune. Then there was a wondrous display of oratory; high-flown speeches were delivered and reported; grandiloquent eulogiums lavished without measure; loud plaudits of astonishment and silly wonder; till the whole jubilation was at length ended through sheer exhaustion and debility of the articulative organs. Oh this canting affectation, which is so eager to honour the talent that has been already honoured!—this hollow reverberating applausiveness, which delights in sounding forth its empty gratulations among the tombs and forsaken habitations of them that have been distinguished!—would that it could cease, and leave the memories of modest men at rest! For how many, think you, out of that respectable multitude had penetration enough to have discerned any merit in such a man as Heyne while he slept bedless in Sonntag's garret with folios for his pillow, and dined grimly in the twilight on a dish of peascods without sauce? Perhaps it is difficult to honour a man at all in any popular and public fashion apart from his position; but it is obvious that all such honouring as this is but a conventional and ceremonial triviality. Heyne's proper honour is that which is paid to him by the conscious or unconscious admiration of men of his own class—by the scholars and the students who perceive and can appreciate the services he performed in the way of facilitating the study of ancient literature. This is the only honour which could have any meaning for Heyne, or for any other person of the like acquisitions and endowments.

In looking over the life and performances of Heyne, the first thing which strikes us is the man's amazing diligence. The quantity of work which he performed is almost sufficient to justify Hazlitt's assertion, that human life

is long enough to crowd into it all the arts and sciences. A very brief notice of his most important labours, without any attempt to estimate their individual excellences or deficiences, is all that can be rendered in the present pages:—

The first editions of his 'Tibullus' and 'Epictetus' have been already mentioned. These were Heyne's achievements while he was still under probation, and, as the reader has seen, were prepared in the midst of circumstances in the highest degree unfavourable for such pursuits. The 'Tibullus' was subsequently republished in two other editions, each time with large extensions and improvements; and the 'Epictetus' also went through a second edition, with similar emendations. Among Heyne's further labours there are not less than six separate editions of 'Virgil,' published in various forms at different times, from 1767 to 1803; next we have two editions of 'Pliny,' one in 1790, and the other in 1811; then there are two editions of 'Appollodorus,' which appeared respectively in 1787 and 1803; three editions of 'Pindar,' published successively in 1774, 1797, and 1798, the last very considerably enlarged; 'Conon and Parthenius' in 1798; and lastly, an elaborate edition of 'Homer,' in eight volumes, 1802; and a second, contracted edition in two volumes, 1804.

In addition to the above, which could have been produced only by means of immense labour and research, we have a countless medley of translations from all languages; amongst which, as being a work of no inconsiderable extent, may be mentioned an improved version of Guthrie and Gray's 'Universal History.' There are, besides, about a dozen goodly volumes of miscellaneous essays, treating of all imaginable subjects; six volumes of which are also known in a separate shape, under the title of 'Opuscula,' and are said to contain some highly valuable writings. Finally, it appears, according to Heeren's computation, that Heyne was the author of between seven and eight thousand reviews of books!—an astonishing feat of authorship, had he even never produced a line in any other department of human literature.

Any one will admit that here surely is an author first-rate in point of *quantity*. Were it possible to think and write, as well as print, by steam-machinery, one could scarcely calculate upon a literary engine, of average practicable power, being brought to the capability of producing more. Indeed Heyne seems to have been in great part a sort of animated classical machine—though we believe it must be admitted that he was a machine invested with a faculty of rational discrimination and discernment. If he works after the manner of a machine, there is nevertheless a human head active enough in directing the wheels. Still, in such a mass of writings as he has left, it is hardly to be expected that elegance or nicety of composition should be a very prevailing feature. Heyne, we believe, is considered by his own countrymen as a very indifferent writer of the German tongue. His object, indeed, had no respect to excellence in this particular. His Latin style, which is his commonest medium of expression in his learned works, is of that sort which is esteemed well enough for a commentator, but is utterly without pretensions to literary grace.

The value of Heyne's writings is altogether apart from style: it lies in his deep research, in his powers as an interpreter, in his keen-eyed skill in exposition and emendation—whereby the real qualities of classical literature

become intelligibly apparent, to an extent not before attainable by its students. In Germany—and indeed now for a long time in Europe generally—Heyne is regarded as the founder of a new epoch in classical investigations. He is esteemed as the first eminent scholar 'who with any decisiveness attempted to translate fairly beyond the letter of the classics; to read in the writings of the ancients, not their language only, or even their detached records and opinions, but their very spirit and character, their way of life and thought;' how, in short, the world and human life were represented to the minds of men in the olden foregone ages, and what manner of living and acting persons the Greeks and Romans really were. By his minute inquiries into antiquity, more especially as regards its politics and mythology, Heyne is believed to have opened a shaft into some of the most important mysteries of ancient times. Since his day this has been extended by other diligent labourers into a wide and productive mine, so that now the state of classical learning is advanced far beyond the point at which Heyne left it. Yet as the originator, in great part, of a new method of interpretation, his merits are unquestionable, and even sufficient to justify the exalted praises which have been universally awarded to him on their account.

While, however, his distinction as a commentator is thus considerable, he cannot properly be regarded intellectually as a great, or even perfectly accomplished man. He remains to us little other than a painstaking plodding commentator after all; excellent in this department, but indifferently endowed with the gifts which could entitle him to a loftier reputation. Great perspicuity of exposition, and unwearied diligence in prosecuting his learned investigations to serviceable results, are perhaps to be reckoned as his principal characteristics; to any important clearness or superior polish of thought or of expression, to any philosophical order, or artistic classical adjustment, it is not commonly believed that he has any just pretension. Nay, it is even said that he is not unfrequently involved in 'tortuous verbosities,' akin to the defects of the old-school commentators, whom his foremost admirers are apt to boast that he displaced. Writing from long habit in a dead language, he may probably be pardoned for sometimes writing heavily; yet there are judges in these matters who are not scrupulous in asserting that Heyne's learned harness became at length the most imposing portion of the man, and that, like Don Quixote, he could not go abroad on the most frivolous adventure without the pedantry of encasing himself in this awkward and fantastic armour. There is undoubtedly a possibility that a man may be too 'learned.' The growth of all extraneous encasements is apt to be prejudicial to the living power that inhabits them: naturalists and fishermen can tell you that a redundancy of shell is to the detriment of the oyster. Heyne perhaps grew to be a somewhat too exclusive impersonation of the university professor, seems to have been stereotyped into a 'learned man' from a comparatively early period of his career, and to have taken his estimate of men and things too generally from the appearances they presented through a pair of college-tinted spectacles.

Under the moral manifestation, Heyne seems likewise to have exhibited something of this pedant-like contractedness. It has been said that there was in his manner a certain hardness, and even apparent insensibility,

verging towards repulsiveness, which was nevertheless no portion of his intrinsic character. The grave professorial habit was so ingrained in him, that he passed for a man of less kindliness and less enthusiasm than he really was. Among the warmer sort of religious people he was scarcely considered to be religious; yet we suppose that would nowise be the opinion of any discerning reader who has looked into his autobiography, or seen his deportment under circumstances of calamity. Cold and insensible as he looked, all who have followed us through the several revolutions of his history will not have failed to observe beautiful underlying streams of tenderness and affection which, at the call of strong occasions, would well upwards in fountains of pure and gentle feeling. He has throughout a quiet and steady confidence in the justness and perfect wisdom of the providential oversight, in the everlasting goodness of the divine appointments and conditions. Only in his way of signifying his sense of these he displays an awkwardness and reserve which seem to indicate an insensitive disposition. There is a want of heartiness and earnestness in his demeanour which is calculated to excite suspicion that he is devoid of generous and earnest qualities. But there are indeed no grounds for such suspicion. The imperfection is but a consequence of incomplete development, of the damaging influences of his circumstances and peculiar employments. The thick atmosphere of learned mannerism in which he works and lives, is too dense to admit of the undistorted shining of his modest virtue. The man is a good man enough, but he has no capacity for letting his light shine cheerfully and profitably among other men. He is so encumbered with learned casings, as to be almost in the condition of that singular garment which the 'Tale of the Tub' makes mention of, and which had, in the progress of refinement, become so overladen with extraneous ornament, as to give rise to a controversy respecting the original colour of the cloth.

After all deductions, however, Heyne is well entitled to respect as a highly able and meritorious man. He lived through that which to many would have been death, or moral ruin. His life, upon the whole, is a noble spectacle, an admirable encouragement to steady industry and perseverance. Scarcely is there anywhere upon record an instance of more invincible pertinacity and steadfastness in the pursuit of a worthy object, in following out an aim which involved so much protracted anxiety and distress—such immovable decisiveness in abiding by a purpose which, though nowise clear at first, appears still to have been attended by an intense conviction or presentiment that that was verily the purpose which it behoved him to strive after. His history is highly valuable, independently of his fame as a man of learning. It exhibits a man working under the most unfavourable circumstances, with scarcely any means to start with, and yet, by resolute persistency, surmounting every obstacle, and rising at last into dignity and reputation. It reveals to us something of that partial omnipotence which resides in the human will, and gives us token how a purpose, honestly and intently prosecuted, can scarcely fail to be successful. Heyne's genius was not of the loftiest, nor his object perhaps of the noblest; but still his instinct for the pursuits to which he devoted himself seems deserving of the name of genius, and his object was unquestionably a worthy and important one. It was to help forward the cause of

true intelligence in the world, to clear up some of the errors and difficulties which lay opposed to the perfect understanding of those records of thought and character which the ancients have left us for our study and entertainment; and it cannot be denied that in this remote but yet useful province he wrought with admirable energy and success. By his labours the people of antiquity have been brought more intimately before us, and the spirit and characteristics of their culture more accurately and adequately expounded; so that, upon the whole, our knowledge of them and their proceedings has been enlarged, and their history and achievements have thus been rendered matters of a profounder and more profitable interest. This is a praise which the learned generally appear disposed to award to Heyne, and it is obviously one which assigns to him a position of no inconsiderable distinction.

The interest of Heyne's biography, however, will rest mainly in the unfavourableness of his personal circumstances, and in the spirit of endeavour which enabled him to triumph over them. He is a witness to the truth, that a man is not altogether the product of circumstances, but that he is competent to modify, and even in some degree to subjugate them. Human power has a dominion over fortune. While it is not to be denied that adversity is oftentimes the means of marring and interrupting the fair development of a man's capacities, it is yet true that he may advance to very considerable heights of culture, both morally and intellectually, in spite of the worst external hindrances. Nay, it is matter of experience, that the ablest and greatest men, in nearly all departments of affairs, have been actually benefited and invigorated by the press of temporary difficulties, and have risen to higher elevations through the strength which they had gathered in conflict with misfortune. The man that can walk only in smooth and unobstructed paths, is not likely to proceed very successfully on any important journey. Great, almost incalculable, is the power of persistency. This is the conquering quality, more than any other, which Heyne's career illustrates. He is a personal exemplification of the force of persevering effort, of resolute and unwavering abidance by an approved pursuit, and of final triumph thereby over a most hostile array of circumstances. Thus is his life an encouragement to all aspirants; not especially on account of the material rewards which attended his exertions, but most emphatically in regard to that higher and more permanent success which is realised through the true unfolding and manifestation of a man's predominating talents.*

In contemplating the career of a scholar such as Heyne, one cannot fail to be struck with the wide dissimilarities between the scholar-life of Germany and that of England. Overlooking such obvious differences as exist in the social conditions and habits of English and German students, we are inclined to draw attention to the kinds of encouragement which men of parts are accustomed to receive from the learned institutions of the two countries. Here we have no instance of a man making

* The facts of the preceding narrative are derived from Professor Heeren's Life of Heyne; and some of the translated passages have been taken from an article on Heyne in 'Carlyle's Miscellanies,' which has also in other respects been serviceable to the writer.

his way to university honours by independent force of scholarship—no example of any one rising into eminence at the seats of learning, who did not first study after an orthodox and prescribed plan, involving a very considerable personal expense, and therefore altogether excluding the poorer sort from any participation in its benefits. There have been instances, it is true, of persons caught up out of the humbler ranks of life, and sent to study in our colleges, where the chances of advancement were undoubtedly as free to them as others—witness, for example, the cases of Kirke White and William Gifford; but the universities are meanwhile utterly inaccessible to all such as are not supported or befriended by the like extraneous patronage. In England, Heyne, working under kindred circumstances to those which encumbered him in Germany, could by no possibility have obtained a classical professorship. No matter what amount of learning he had acquired, or what degree of aptitude he might evince for investigating or enlarging its acquisitions, he would have been entirely debarred by his poverty from ever gaining any important collegiate rank or distinction. And though perhaps this might have been no lasting impediment to the fame and ultimate influence of the man, yet it must have been an unquestionable hindrance to the progress of erudition in his generation, and would certainly have precluded him from occupying that eminent position among his contemporaries which he so well deserved, and was so admirably qualified to fill, and to which, through his most praiseworthy endeavours and exertions, he was enabled to attain among his countrymen.

The impassable bar or obstacle whereof we speak, and which so manifestly prevents the impoverished or unaided sons of genius from gaining access to our universities, and exercising an influence within them, is probably one of the most significant causes of the stagnant condition of learning which is so commonly admitted to prevail in those institutions. The men who succeed in obtaining distinctions and emoluments in them are not generally the most gifted or enlightened, but persons who, by dint of *cramming*, have prepared themselves expressly for the situations which by that process are procurable: they commonly enter with no other object than that of reaping the *rewards* of learning—of rising by means of the literary honours they may obtain into some desirable conventional position—a position which they are apt to regard more for its secular and connectional benefits, than for the opportunities it may afford for a patient and disinterested cultivation of truth and knowledge—the very realities which all colleges and universities were originally instituted to preserve and progressively unfold, to the end that human life and the wellbeing of men might be advanced, and their characters permanently perfected and adorned. Where the rewards of knowledge are not especially in request, a university education is sought after as being necessary to a man's condition or rank in life; and in this case it is looked upon as a sort of accredited ornament which, by the demands of society, is needful to be worn. The genuine *lovers and devotees* of learning for its own sake, or for the sake of the advancement of humanity, are accordingly, in our age and country, extremely rare exceptions to the ordinary run of persons who enter upon such pursuits. The high importance attached to the conventional *position* it confers (when prosecuted according to the prescribed

courses), is such as to drive out of all minds, except the purest and most disinterested, that just estimate of the worth and significance of knowledge which should be sedulously and reverently cultivated, and without which knowledge can never be prosecuted with any beneficial success. 'The sciences,' said Jean Paul, 'are my heaven.' In them he could expatiate with an incessant and perpetual joy; whatsoever rewards he might reap from the world in return for his devotion to them, he could thankfully accept, and proceed onwards with an encouraged spirit; but he, and all others such as he, would have deemed it a desecration to have regarded science or literature as only the convenient stepping-stones for their ambition, or to have followed them for any inferior satisfaction than that which they themselves will yield to their faithful cultivators and adherents.

In Germany, it would seem that if a man will prosecute knowledge or learning for its own sake, the institutions of the country, to some extent, further him in doing so, and his poverty will be no final impediment to his attainment of honourable distinction among the learned. He has only to give proofs of a superior intelligence, and the highest posts of learned eminence are open to his acceptance. He needs no further recommendation than the superiority of his qualifications. The consequence is, that men of the highest attainments are always adequately provided for, and rise to the exact position in which they can best and most effectually carry out their undertakings. The painful probation through which many of them have to pass is not entirely an evil, since by proving themselves worthy of encouragement or promotion, they are almost certain to obtain it in due season; for it appears that all over Germany there is a constant inquiry going on respecting the qualifications and merits of men of learning and ability, and a perpetual desire and effort to obtain their services in places of influence and distinction. It is said that the prime minister of every State is always in regular correspondence with some eminent director of the learned institutions: he oversees and takes note of all their proceedings and operations, and knows the character not only of every professor, but of every pupil who gives signs of promise. 'He is continually purchasing books, drawings, models; treating for this or the other help or advantage to the establishment. He has his eye over all Germany; and nowhere does a man of any decided talent show himself, but he strains every nerve to acquire him'— often, indeed, without success, for a similar assiduity seems to actuate every minister of education throughout the country. Many of them are in frequent communication with each other—corresponding, inquiring, negotiating; 'everywhere there seems a canvassing, less for places than for the best men to fill them.'

By way of contrast to such a state of things, it may not be amiss to bring to mind an incident in our own literary history of the last age. A few years before the time when Heyne, after his stern novitiate, was entering upon the comfortable and reputable office which his learning had obtained for him in Göttingen, Samuel Johnson was striving to snatch a livelihood in London, by translating and performing other literary hackwork for the booksellers. It may be remembered that on one occasion the stalwart Samuel subscribed himself in a letter to Sylvanus Urban—'Yours, *impransus*, Sam. Johnson;' that is to say, the man was dinnerless. Harassed and heart-

weary with his irksome and precarious way of life, and willing to turn himself to anything, however humble, which promised him a *certain* income, Johnson sought to get appointed to the mastership of a country school, to which was attached a salary of sixty pounds a year. The trustees were willing to appoint him, being well satisfied with his attainments; but the statutes of the school required that the master should have taken the degree of Master of Arts at one of the universities. Johnson had been at Oxford, but had taken no degree, inasmuch as his circumstances prevented him from continuing a sufficient length of time; though there appears to be every reason for believing that he was far enough advanced in learning to have passed a creditable examination. His scholarship, perhaps, was never of the highest order; but unquestionably degrees were taken by many students whose acquisitions were much inferior. There never was a doubt entertained as to his being amply qualified for the appointment which he sought, and only a degree was needed to enable him to obtain it. Under the circumstances, application was made in his behalf to the university of Oxford, soliciting, by way of favour, that the desired degree might be granted him, with the understanding that he was 'not afraid of the strictest examination.' There can be no question that had he been examined, he would have proved himself worthy of the required honour; but the university was so hampered by forms and practices, as to be obliged to refuse the application, or else the authorities were indisposed to help a deserving man in his extremity. Anyway, the favour asked was deemed too great a favour to be conferred. Johnson was constrained to continue working in his Egyptian task-field in London, and the heads of Oxford university lost the honour which they might have earned by befriending a praiseworthy scholar. They refused him, indeed, the serviceable credentials to which he was intrinsically entitled; and by their indolence and heedlessness they cast an unmerited slight upon the unexceptionable qualifications which he was seeking to turn honestly to account as the means of earning his daily bread.

Now, we are not prepared to say that it was not really better in the end, both for Johnson and the world, that the application here in question proved a failure, since, considering his particular temperament, his natural sluggishness, his frequent indisposition to exertion unless urged by the spur of necessity, some of his ablest writings might perhaps have never been produced; but with regard to the functions of our universities, it is not the less apparent that they offer no help to men of learning under any of the circumstances in which they most require help, but are positive hindrances to such scholars at least as, from insufficiency of means, have been irregularly educated, howsoever complete may be their scholarship; nor do they take the slightest recognition of that single-minded devotedness to intelligence which is to be found mainly among those hard-faring and struggling students who flinch not to strive and suffer out of earnest zeal for its acquisition and advancement. The universities of England superciliously ignore the existence of any scholarship that has not been derived from their own teaching. They claim to be the popes of learning, and assume a pope's infallibility, designating as heresy in letters whatsoever may not agree with their own antiquated and peculiar standards. They have the keys of the kingdom of knowledge, and into the select fellowship of the saints of their

communion they admit none who do not bow in reverence to their perfections and supremacy. Now it appears to us that in respect to real catholic utility, or to the promotion of the best interests of learning, these honoured and wealthy institutions stand in quite unfavourable contrast with the more liberally-constituted universities of Germany. We repeat that in England a man like Heyne, under the same conditions of life, could not have gained a university professorship. Being hindered by his poverty from passing through the prescribed gradations of study, in conformity with collegiate systems, he could not have obtained that authoritative acknowledgment of his attainments which would be needed to qualify him to enter upon any university appointment. He would have been entirely excluded from any place or position of the kind. Yet in Germany Heyne became the foremost classical scholar of his age. There is surely some grave defect in the institutions which, in this country, would have been unable to avail themselves of a capacity so eminent. England would have lost the benefit of such a man's activity. There would have been no place for him, just as there was no degree for Samuel Johnson, unless, perhaps, as in Johnson's case, the university might have condescendingly bestowed some honorary distinction on him at a time when he had made his own way in the world, and had no longer any special need of it. Oxford favoured Johnson with a diploma when he had executed the most useful, and, everything considered, the greatest work of English scholarship that was produced in his own age—his famous English Dictionary; but it was then a greater honour to the university for Johnson to accept such a degree, than it was to Johnson to have it granted him. What he said of Chesterfield's patronage might have been as reasonably said of this university distinction—'Had it been earlier, it had been kind; but it has been delayed till I am indifferent, and cannot enjoy it—till I am *known*, and do not want it.' All such distinctions are extremely paltry when compared with the services which a university might render to the struggling aspirants and devotees of learning, were it so constituted as to admit them to examinations, independently of residence or tests, and grant degrees or testimonials corresponding to their actual proficiency. Here, indeed, would be a noble vantage-ground wherefrom the poor and honest student might, if duly gifted and industrious, rise to honour in spite of poverty and its concomitant obstacles; it would set him in good measure square with his richer competitors; and give a freer and wider scope for the success of a manly and enterprising emulation.

In conclusion, we submit, with due respect, whether, in any contemplated enlargements of the usages and usefulness of our universities, it may not be well and possible to make some provision for the admission of our English Heynes, should any such arise, seeing that for the due and perfect prosecution of learning there should be men thoroughly and earnestly devoted to it, without respect to its conventional immunities; and while public encouragement is requisite for the furtherance of all difficult and abstruse studies, it is surely just that the same should be liberally and fairly accessible to all who may manifest any aptitude or diligence in regard to them. One thing, we think, may be affirmed with safety, which is—that so long as university dignities and emoluments are

obtainable almost exclusively by the mere mechanical *crammers*—which, we hear it said, is quite the general rule—and so long also as these positions are sought solely or mainly out of regard for their advantages as places of mere material estimation and respectability, the condition of learning in England cannot be satisfactorily progressive, nor the universities themselves continue to be held in that high respect which formerly they merited. That cause or interest is always the best advanced which can command the willing services of those who are devoted to it with pure and disinterested intents; not that we undervalue the advantages to be derived from a regular and systematic training, but that we claim for genius, for talent and industry, wherever found, or in whomsoever they may appear, that freedom of development, that respect and honour, those privileges and those rewards, to which, by their own intrinsic merits, they are so righteously entitled.

END OF VOL. VI